

# Work Order ID 162389

Tuesday, June 06, 2017 4:57:32 PM

**\*162389\***

Page 1

Item ID: D119-796-241 Accept **\*N900040100\*** Setup Start **\*NS1\***  
 Revision ID: Stop **\*NS2\***  
 Item Name: AFT Crosstube Installation without Step (no hardware)  
 Start Date: 6/22/2017 Start Qty: 1.00 **\*1\*** Cust Item ID:  
 Required Date: 7/19/2017 Req'd Qty: 1.00 **\*1\*** Customer:  
 Reference:

Approvals: Process Plan: DAS 21 Date: JUN 07 2017 Tooling: \_\_\_\_\_ Date: \_\_\_\_\_ Run Start **\*NR1\***  
 QC: 9-88 Date: \_\_\_\_\_ SPC (Y/N): \_\_\_\_\_ Date: \_\_\_\_\_ Stop **\*NR2\***

| Sequence ID/<br>Work Center ID | Operation<br>Description                                             | Set Up/<br>Run Hours | Tool ID | Tool # | Plan<br>Code | Accept<br>Qty | Reject<br>Qty | Reject<br>Number | Insp.<br>Stamp     |
|--------------------------------|----------------------------------------------------------------------|----------------------|---------|--------|--------------|---------------|---------------|------------------|--------------------|
| <b>Draw Nbr</b>                | <b>Revision Nbr</b>                                                  | <b>DAS</b>           |         |        |              |               |               |                  |                    |
|                                |                                                                      | <b>03</b>            |         |        |              |               |               |                  |                    |
| D119-796-241                   | 43 17-6-7                                                            | 9-89                 |         |        |              |               |               |                  |                    |
| 110                            | Document Control                                                     | 0.00                 |         |        |              |               |               |                  | N/A <i>df</i>      |
| <b>*110*</b>                   |                                                                      |                      |         |        |              |               |               |                  |                    |
| DC                             | Memo                                                                 | 0.02                 |         |        |              |               |               |                  |                    |
| Doc.Control -USB or Paperwork  | Photocopy bluefile and create labels as per PPP D119-796-241 Chg 005 |                      |         |        |              |               |               |                  |                    |
| 120                            | Pick Kit                                                             | 0.00                 |         |        |              |               |               |                  |                    |
| <b>*120*</b>                   | Packaging                                                            |                      |         |        |              |               |               |                  |                    |
| Packaging                      | Memo                                                                 | 0.02                 |         |        |              |               |               |                  | <i>JW</i> 17-07-10 |
| Packaging                      |                                                                      |                      |         |        |              |               |               |                  |                    |
| 130                            | BENDING MACHINE - CROSSTUBES                                         | 0.94                 |         |        |              |               |               |                  |                    |
| <b>*130*</b>                   |                                                                      |                      |         |        |              |               |               |                  |                    |
| CNC Bend 2                     | Memo                                                                 | 1.41                 |         |        |              |               |               |                  | <i>JW</i> 17-07-10 |
| CNC Alpha 160 Bender           | Bend tube as per Dwg D119-796-241 using CNC bender program           |                      |         |        |              |               |               |                  |                    |

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Item Name: AFT Crosstube Installation without Step (no hardware)

Start Date: 6/22/2017 Start Qty: 1.00 \*1\*

Cust Item ID:

Required Date: 7/19/2017 Req'd Qty: 1.00 \*1\*

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Approvals: Process Plan: \_\_\_\_\_ Date: \_\_\_\_\_ Tooling: \_\_\_\_\_ Date: \_\_\_\_\_

Run Start \*NR1\*

QC: \_\_\_\_\_ Date: \_\_\_\_\_ SPC (Y/N): \_\_\_\_\_ Date: \_\_\_\_\_

Stop \*NR2\*

| Sequence ID/<br>Work Center ID | Operation<br>Description           | Set Up/<br>Run Hours | Tool ID | Tool # | Plan<br>Code | Accept<br>Qty | Reject<br>Qty | Reject<br>Number | Insp.<br>Stamp |
|--------------------------------|------------------------------------|----------------------|---------|--------|--------------|---------------|---------------|------------------|----------------|
| 140                            | QC15- Crosstube Dimensional Check  | 0.00                 |         |        |              |               |               |                  |                |
| *140*                          |                                    |                      |         |        |              |               |               |                  |                |
| QC                             | Memo                               | 0.02                 |         |        |              |               |               |                  |                |
| Quality Control                |                                    |                      |         |        |              |               |               |                  |                |
| 145                            |                                    | 0.00                 |         |        |              |               |               |                  |                |
| *145*                          |                                    |                      |         |        |              |               |               |                  |                |
| Crosstubes                     | Memo                               | 2.82                 |         |        |              |               |               |                  |                |
| Crosstubes                     | 1- CUT TUBE AT HEIGHT ON FAI SHEET |                      |         |        |              |               |               |                  |                |
|                                | 2- VERFY HEIGHT: 25.100            |                      |         |        |              |               |               |                  |                |
|                                | BY QC15 LEVEL INSPECTOR: JH        |                      |         |        |              |               |               |                  |                |
|                                | 3- DEBURR CUT SURFACE              |                      |         |        |              |               |               |                  |                |

JUL 11 2017

082 17-07-13

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Run Start **\*NR1\***

QC: \_\_\_\_\_ Date: \_\_\_\_\_ SPC (Y/N): \_\_\_\_\_ Date: \_\_\_\_\_

Stop **\*NR2\***

| Sequence ID/<br>Work Center ID | Operation<br>Description | Set Up/<br>Run Hours | Tool ID | Tool # | Plan<br>Code | Accept<br>Qty | Reject<br>Qty | Reject<br>Number | Insp.<br>Stamp |
|--------------------------------|--------------------------|----------------------|---------|--------|--------------|---------------|---------------|------------------|----------------|
|--------------------------------|--------------------------|----------------------|---------|--------|--------------|---------------|---------------|------------------|----------------|

150

0.52

**\*150\***

Crosstubes

Crosstubes

Memo

1.63

\*\*\*\*\* ENSURE PROPER JIG POSITIONING \*\*\*\*\*

1-DRILL TUBE AS PER DWG USING DT10087

2- DRILL RIVET HOLES USING DT8787 FWD

3- DEBURR AND C'SINK RIVET HOLES AS PER DWG

4- FLIP TUBE, REPEAT STEP 2 AND 3

5- SCRIBE PART# AND BATCH# USING VIBRATING STYLUS ON INSIDE  
OF CUFF AS PER DWG D119-796-141

*DR*  
*GP*  
17-07-13

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Run Start **\*NR1\***

QC: \_\_\_\_\_ Date: \_\_\_\_\_ SPC (Y/N): \_\_\_\_\_ Date: \_\_\_\_\_

Stop **\*NR2\***

| Sequence ID/<br>Work Center ID | Operation<br>Description | Set Up/<br>Run Hours | Tool ID | Tool # | Plan<br>Code | Accept<br>Qty | Reject<br>Qty | Reject<br>Number | Insp.<br>Stamp |
|--------------------------------|--------------------------|----------------------|---------|--------|--------------|---------------|---------------|------------------|----------------|
|--------------------------------|--------------------------|----------------------|---------|--------|--------------|---------------|---------------|------------------|----------------|

160

Crosstubes Chemical Conversion

0.00

**\*160\***

HandFXtube

Memo

1.69

Hand Finishing Crosstubes

1- INSPECT AND REMOVE ALL MARKS FROM TUBE WITHIN LIMITS  
ON DWG D119-796-141

\*\*\*IMMEDIATELY AFTER GRINDING\*\*\*

2- PRESSURE WASH X-TUBE INSIDE AND OUT

3- ALODINE AND ACID ETCH X-TUBE INSIDE AND OUT AS PER QSI005.

4- Verify grinding marks By: JWGP 17 07 13  
DPZ

170

QC7-Inspect Chemical Conversion Coat

0.00

**\*170\***

QC

Memo

0.02

Quality Control

JW 17-07-13

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| Sequence ID/<br>Work Center ID | Operation<br>Description               | Set Up/<br>Run Hours | Tool ID | Tool # | Plan<br>Code | Accept<br>Qty | Reject<br>Qty | Reject<br>Number | Insp.<br>Stamp    |
|--------------------------------|----------------------------------------|----------------------|---------|--------|--------------|---------------|---------------|------------------|-------------------|
| 180                            | Outsource process - NDT per QSI038 4.1 | 0.00                 |         |        |              |               |               |                  | DAS<br>13<br>9-89 |
| *180*                          |                                        |                      |         |        |              |               |               |                  |                   |

Outsource2 Memo 0.00  
Outsource process - NDT \*\*\* WEAR LATEX GLOVES WHEN HANDLING CROSSTUBE\*\*\*  
Liquid Penetrant Inspection as per QSI 038Or  
Issue P/O: 37049 LPI as per ASTM 1417  
Level 2 Attach copy of NDT results to work order

|           |                                                    |      |
|-----------|----------------------------------------------------|------|
| 190       | Receive & Inspect for Damage & Mat'l Certs         | 0.00 |
| *190*     | Packaging                                          |      |
| Packaging | Memo                                               | 0.02 |
| Packaging | Ensure copy of NDT results attached to work order. |      |

|                 |                                                  |      |
|-----------------|--------------------------------------------------|------|
| 200             | QC5- Inspect part completeness to step on W/O    | 0.00 |
| *200*           |                                                  |      |
| QC              | Memo                                             | 0.02 |
| Quality Control | *** WEAR LATEX GLOVES WHEN HANDLING CROSSTUBE*** |      |

Inspect for damage & ensure results are as per Dwg D119-796-241

1X S017-7-17

(  
DAS  
38  
9-89  
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Finish Time: 800

~~9-89~~  
JUL 15 2017

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| Sequence ID/<br>Work Center ID | Operation<br>Description                                                         | Set Up/<br>Run Hours | Tool ID | Tool # | Plan<br>Code | Accept<br>Qty | Reject<br>Qty | Reject<br>Number | Insp.<br>Stamp    |
|--------------------------------|----------------------------------------------------------------------------------|----------------------|---------|--------|--------------|---------------|---------------|------------------|-------------------|
| 240                            | QC14- Inspect Spray Paint                                                        | 0.00                 |         |        |              | 1             |               |                  | DAS<br>38<br>9-89 |
| <b>*240*</b>                   |                                                                                  |                      |         |        |              |               |               |                  |                   |
| QC                             | Memo                                                                             | 0.00                 |         |        |              |               |               |                  |                   |
| Quality Control                | ***VERIFY BY <u>162389</u> <b>DAS</b> <b>38</b> <b>9-89</b> BATCH # TO MATCH W/O |                      |         |        |              |               |               |                  |                   |
|                                | ***VERIFY BY <u>162389</u> <b>DAS</b> <b>38</b> <b>9-89</b> PART # TO MATCH      |                      |         |        |              |               |               |                  |                   |
|                                | W/O <u>162389</u>                                                                |                      |         |        |              |               |               |                  |                   |

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QC: \_\_\_\_\_ Date: \_\_\_\_\_ SPC (Y/N): \_\_\_\_\_ Date: \_\_\_\_\_ Stop **\*NR2\***

| Sequence ID/<br>Work Center ID | Operation<br>Description | Set Up/<br>Run Hours | Tool ID | Tool # | Plan<br>Code | Accept<br>Qty | Reject<br>Qty | Reject<br>Number | Insp.<br>Stamp |
|--------------------------------|--------------------------|----------------------|---------|--------|--------------|---------------|---------------|------------------|----------------|
|--------------------------------|--------------------------|----------------------|---------|--------|--------------|---------------|---------------|------------------|----------------|

242

0.00

**\*242\***

Crosstubes

Crosstubes

Memo

1.58

Assemble as per dwg D119-796-241 and QSI

1- Abrade mating surfaces with Scotch Brite 7447 and clean with Dupont 4105s or equivalent as per dwg.

2- Install D5152-043 with proseal 890 on concave surface, 0.100" MIN thick as per dwg using DT10112 (identified right and left)

\*\*\*\*MAINTAIN CLAMPING PRESSURE ON FOR MIN 72HRS\*\*\*\*

Proseal Batch: 137495EXP: 1/18

PROSEAL CURE TIME 72 HOURS:

Start: 17-7-16Finish: 17-7-19

3- USE DT10304 PINS TO LOCATE SUPPORTS. Install center support without bonbing.

4- USE DT10304 PINS TO LOCATE SUPPORTS. Install Damper support and contact pads using proseal 890 per dwg and clamp in position.

Proseal Batch: 137495

EXP: \_\_\_\_\_

PROSEAL CURE TIME 72 HOURS:

Start: 17-7-16Finish: 17-7-19

DAS

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9-89

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QC: \_\_\_\_\_ Date: \_\_\_\_\_ SPC (Y/N): \_\_\_\_\_ Date: \_\_\_\_\_ Stop **\*NR2\***

| Sequence ID/<br>Work Center ID | Operation<br>Description                                   | Set Up/<br>Run Hours | Tool ID | Tool # | Plan<br>Code | Accept<br>Qty | Reject<br>Qty | Reject<br>Number | Insp.<br>Stamp    |
|--------------------------------|------------------------------------------------------------|----------------------|---------|--------|--------------|---------------|---------------|------------------|-------------------|
| 244                            | QC5- Inspect part completeness to step on W/O              | 0.00                 |         |        |              |               |               |                  | DAS<br>38<br>9-89 |
| <b>*244*</b>                   |                                                            |                      |         |        |              |               |               |                  |                   |
| QC                             | Memo                                                       | 0.02                 |         |        |              |               |               |                  |                   |
| Quality Control                | ***VERIFY BY <u>162389</u> <b>DAS</b> BATCH # TO MATCH W/O |                      |         |        |              |               |               |                  |                   |
|                                | ***VERIFY BY <u>162389</u> <b>38</b> PART # TO MATCH       |                      |         |        |              |               |               |                  |                   |
|                                | W/O <u>162389</u>                                          |                      |         |        |              |               |               |                  |                   |

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**\*N900040100\***

Setup Start

**\*NS1\***

Revision ID:

Stop

**\*NS2\***

Item Name: AFT Crosstube Installation without Step (no hardware)

Start Date: 6/22/2017 Start Qty: 1.00 **\*1\***

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Reference:

Approvals: Process Plan: \_\_\_\_\_ Date: \_\_\_\_\_ Tooling: \_\_\_\_\_ Date: \_\_\_\_\_

Run Start

**\*NR1\***

QC: \_\_\_\_\_ Date: \_\_\_\_\_ SPC (Y/N): \_\_\_\_\_ Date: \_\_\_\_\_

Stop

**\*NR2\***

| Sequence ID/<br>Work Center ID | Operation<br>Description      | Set Up/<br>Run Hours | Tool ID | Tool # | Plan<br>Code | Accept<br>Qty | Reject<br>Qty | Reject<br>Number | Insp.<br>Stamp    |
|--------------------------------|-------------------------------|----------------------|---------|--------|--------------|---------------|---------------|------------------|-------------------|
| 246                            | Spray Painting per QSI005 4.2 | 0.00                 |         |        |              |               |               |                  | DAS<br>41<br>9-89 |

**\*246\***

SprayPaint

Spray Painting

Memo

0.43

\*\*\*VERIFY BY DAS BATCH # TO MATCH W/O\*\*\*VERIFY BY 41 PART # TO MATCHW/O 162389 9-89

\*\*\*MASK SCRIBE B# &amp; P# AND VERIFY\*\*\*

1- Remove all non-fixed hardware and clean any excess proseal.

2- Scuff tube with Scotch Brite 7447.

3- Mask cuff and all other location as per note#2.

4- Prime as per dwg and QSI005

Primer Batch: 136887Start Time: 700Finish Time: 800

5- Apply matte clear as per dwg and QSI005

Clear Batch: 137770Start Time: 900Finish Time: 1200

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Run Start **\*NR1\***

QC: \_\_\_\_\_ Date: \_\_\_\_\_ SPC (Y/N): \_\_\_\_\_ Date: \_\_\_\_\_

Stop **\*NR2\***

| Sequence ID/<br>Work Center ID | Operation<br>Description                                                                                                                 | Set Up/<br>Run Hours | Tool ID | Tool # | Plan<br>Code | Accept<br>Qty | Reject<br>Qty | Reject<br>Number | Insp.<br>Stamp    |
|--------------------------------|------------------------------------------------------------------------------------------------------------------------------------------|----------------------|---------|--------|--------------|---------------|---------------|------------------|-------------------|
| 248                            | Spray Painting per QSI005 4.2                                                                                                            | 0.00                 |         |        |              |               |               |                  | DAS<br>41<br>9-89 |
| <b>*248*</b>                   |                                                                                                                                          | 0.60                 |         |        |              | 1             |               |                  |                   |
| SprayPaint                     | Memo                                                                                                                                     |                      |         |        |              |               |               |                  |                   |
| Spray Painting                 | ***VERIFY BY <u>DAS</u> BATCH # TO MATCH W/O<br><u>162389</u> <u>41</u><br>***VERIFY BY <u>9-89</u> PART # TO MATCH<br>W/O <u>162389</u> |                      |         |        |              |               |               |                  |                   |
|                                | ***MASK SCRIBE B# & P# AND VERIFY***                                                                                                     |                      |         |        |              |               |               |                  |                   |
|                                | 1- Mask underside of tube as per dwg. Mask cuff and all other location as per note#2.                                                    |                      |         |        |              |               |               |                  |                   |
|                                | 2- Scuff tube with Scotch Brite 7447                                                                                                     |                      |         |        |              |               |               |                  |                   |
|                                | 3- Paint outside of crosstube                                                                                                            |                      |         |        |              |               |               |                  |                   |
|                                | Paint Batch: <u>137852</u>                                                                                                               |                      |         |        |              |               |               |                  |                   |
|                                | Start Time: <u>700</u>                                                                                                                   |                      |         |        |              |               |               |                  |                   |
|                                | Finish Time: <u>800</u>                                                                                                                  |                      |         |        |              |               |               |                  |                   |

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|--------------------------------|-------------------------------------------------------------------------------|----------------------|---------|--------|--------------|---------------|---------------|------------------|-----------------------|
| 250                            | QC14- Inspect Spray Paint<br>Crosstubes                                       | 0.00                 |         |        |              | <u>1</u>      |               |                  | <u>EB</u><br>17-07-26 |
| <b>*250*</b>                   |                                                                               |                      |         |        |              |               |               |                  |                       |
| QC                             | Memo                                                                          | 0.02                 |         |        |              |               |               |                  |                       |
| Quality Control                | ***VERIFY BY <u>EB</u> 162389 BATCH # TO MATCH W/O                            |                      |         |        |              |               |               |                  |                       |
|                                | ***VERIFY BY <u>EB</u> 162389 PART # TO MATCH                                 |                      |         |        |              |               |               |                  |                       |
|                                | W/O 162389                                                                    |                      |         |        |              |               |               |                  |                       |
| 252                            |                                                                               | 0.00                 |         |        |              |               |               |                  | DAS<br>41<br>9-89     |
| <b>*252*</b>                   |                                                                               |                      |         |        |              | <u>1</u>      |               |                  | JUL 25 2017           |
| Crosstubes                     | Memo                                                                          | 1.00                 |         |        |              |               |               |                  |                       |
| Crosstubes                     | 1- Re-install non fixed hardware per dwg                                      |                      |         |        |              |               |               |                  |                       |
|                                | ***Torque clamps on damper and contact pad to 80-100 IN-LBS.***               |                      |         |        |              |               |               |                  |                       |
|                                | 2- Apply a filet-seal of proseal 890 around damper supports and contact pads. |                      |         |        |              |               |               |                  |                       |
|                                | Allow proseal to dry before inspecting.                                       |                      |         |        |              |               |               |                  |                       |
|                                | Proseal 890 Batch: <u>137495</u>                                              |                      |         |        |              |               |               |                  |                       |
|                                | EXP: <u>1/18</u>                                                              |                      |         |        |              |               |               |                  |                       |
|                                | Sika flex 137526                                                              |                      |         |        |              |               |               |                  |                       |

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Required Date: 7/19/2017 Req'd Qty: 1.00 **\*1\*** Customer:  
Reference:

Approvals: Process Plan: \_\_\_\_\_ Date: \_\_\_\_\_ Tooling: \_\_\_\_\_ Date: \_\_\_\_\_ Run Start **\*NR1\***  
QC: \_\_\_\_\_ Date: \_\_\_\_\_ SPC (Y/N): \_\_\_\_\_ Date: \_\_\_\_\_ Stop **\*NR2\***

| Sequence ID/<br>Work Center ID                | Operation<br>Description                                                                                                                                                                                                                                                                                                                                                               | Set Up/<br>Run Hours | Tool ID | Tool # | Plan<br>Code | Accept<br>Qty | Reject<br>Qty | Reject<br>Number | Insp.<br>Stamp                       |
|-----------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------|---------|--------|--------------|---------------|---------------|------------------|--------------------------------------|
| 260<br><b>*260*</b><br>QC<br>Quality Control  | QC5- Inspect part completeness to step on W/O<br><br>Memo<br>***RE-CHECK TORCQUE ON CLAMP AFTER PROSEAL HAS CURED AS PER DWG.***<br><br>1- ATTACH A RED TAG TO CENTER SUPPORT THAT READS<br><br>"CENTER SUPPORT NOT FIXED"<br><br>THEN DATE AND STAMP IT.<br><br>***VERIFY BY <u>QB</u> BATCH # TO MATCH W/O <u>162389</u><br>***VERIFY BY <u>QB</u> PART # TO MATCH W/O <u>162389</u> | 0.00<br><br>0.02     |         |        |              | <u>1</u>      |               |                  | <u>QB</u><br><u>17-07-26</u>         |
| 270<br><b>*270*</b><br>Packaging<br>Packaging | Pick Kit<br><br>Memo <u>On step w/o</u>                                                                                                                                                                                                                                                                                                                                                | 0.00<br><br>0.00     |         |        |              | <u>1</u>      |               |                  | DAS<br>41<br>9-89<br><br>JUL 25 2017 |

# Work Order ID 162389

\*162389\*

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Tuesday, June 06, 2017 4:57:32 PM

Item ID: D119-796-241 Accept \*N900040100\* Setup Start \*NS1\*  
 Revision ID: Stop \*NS2\*  
 Item Name: AFT Crosstube Installation without Step (no hardware)  
 Start Date: 6/22/2017 Start Qty: 1.00 \*1\* Cust Item ID:  
 Required Date: 7/19/2017 Req'd Qty: 1.00 \*1\* Customer:  
 Reference:

Approvals: Process Plan: \_\_\_\_\_ Date: \_\_\_\_\_ Tooling: \_\_\_\_\_ Date: \_\_\_\_\_ Run Start \*NR1\*  
 QC: \_\_\_\_\_ Date: \_\_\_\_\_ SPC (Y/N): \_\_\_\_\_ Date: \_\_\_\_\_ Stop \*NR2\*

| Sequence ID/<br>Work Center ID | Operation<br>Description                               | Set Up/<br>Run Hours | Tool ID | Tool # | Plan<br>Code | Accept<br>Qty | Reject<br>Qty | Reject<br>Number | Insp.<br>Stamp |
|--------------------------------|--------------------------------------------------------|----------------------|---------|--------|--------------|---------------|---------------|------------------|----------------|
| 280                            | QC4- 100% Inspect kits for completeness                | 0.00                 |         |        |              |               |               |                  |                |
| *280*                          | <i>on step w/o</i>                                     |                      |         |        |              |               |               |                  |                |
| QC                             | Memo                                                   | 0.00                 |         |        |              |               |               |                  |                |
| Quality Control                |                                                        |                      |         |        |              |               |               |                  |                |
| 290                            | Identify as per dwg & Stock Location: _____            | 0.00                 |         |        |              |               |               |                  |                |
| *290*                          | Packaging                                              |                      |         |        |              |               |               |                  |                |
| Packaging                      | Memo                                                   | 0.20                 |         |        |              |               |               |                  |                |
| Packaging                      | Identify and pack for shipping as per PPP D119-796-241 |                      |         |        |              |               |               |                  |                |
|                                | <i>on w/o 162479</i>                                   |                      |         |        |              |               |               |                  |                |
| 300                            | QC21- Final Inspection - Work Order Release            | 0.00                 |         |        |              |               |               |                  |                |
| *300*                          |                                                        |                      |         |        |              |               |               |                  |                |
| QC                             | Memo                                                   | 0.10                 |         |        |              |               |               |                  |                |
| Quality Control                |                                                        |                      |         |        |              |               |               |                  |                |

DAS  
28  
9-89

JUL 26 2017

DAS  
41  
9-89

JUL 16 2017

17/7/28

LM  
7/26/17

# Picklist Print

Monday, June 05, 2017 4:53:44 PM

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Work Order ID: 162389

**\*162389\***

Parent Item: D119-796-241

**\*D119-796-241\***

Parent Item Name: AFT Crosstube Installation without Step (no hardware)

Start Date: 6/22/2017

Required Date: 7/19/2017

Start Qty: 1.00

Required Qty: 1.00

Comments: IPP REV:A 14.09.03 NEW ISSUE DD VERF:JLM IPP  
REV:B 14.10.15 AS PER REV.B DD VERF:JLM IPP REV:C  
14.11.19 AS PER REV.C DD VERF:JLM IPP REV:D 14.12.12  
AS PER REV.pd1 DD VERF:JLM IPP REV:E 15.02.11 AS PER  
REV F JLM VERIFIED BY:DD IPP REV:F 17.05.08 AS PER IIN  
REV.F DD VERF:JFS

| Component Item ID/<br>Item Name                    | Replacement<br>Item ID | Mfg/<br>Purch | Bin<br>Item | Primary<br>Location | Last<br>Location | Route<br>Seq ID | Unit of<br>Measure | Qty on<br>Hand  | Qty per<br>Kit | Total<br>Qty | Qty<br>Issued | Date<br>Issued                  | Status |
|----------------------------------------------------|------------------------|---------------|-------------|---------------------|------------------|-----------------|--------------------|-----------------|----------------|--------------|---------------|---------------------------------|--------|
| AN174-3A<br><b>*AN174-3A*</b><br>BOLT              |                        | Purchased     | No          |                     |                  | 270             | Each               | 30.0000         | 2              | 2            |               | DAS<br>6<br>9-89<br>JUL 16 2017 |        |
|                                                    | DAS<br>28<br>9-89      |               |             | <u>Location</u>     |                  | <u>Loc Qty</u>  |                    | <u>Loc Code</u> |                |              |               |                                 |        |
|                                                    |                        |               |             | ST332               |                  | 30              |                    |                 |                |              |               |                                 |        |
|                                                    |                        |               |             | M132540             |                  | 30              |                    |                 |                | 2            |               |                                 |        |
| MS21042-4<br><b>*MS21042-4*</b><br>Nut             | MS21042L4              | Purchased     | No          |                     |                  | 270             | Each               | 2.0000          | 2              | 2            |               | DAS<br>6<br>9-89<br>JUL 16 2017 |        |
|                                                    | DAS<br>28<br>9-89      |               |             | <u>Location</u>     |                  | <u>Loc Qty</u>  |                    | <u>Loc Code</u> |                |              |               |                                 |        |
|                                                    |                        |               |             | ST304               |                  | 2               |                    |                 |                |              |               |                                 |        |
|                                                    |                        |               |             | 9063                |                  | 2               |                    |                 |                | 137680       |               |                                 |        |
| NAS1149D0432J<br><b>*NAS1149D0432.J*</b><br>WASHER |                        | Purchased     | No          |                     |                  | 270             | Each               | 1,180.000       | 4              | 4            |               | DAS<br>6<br>9-89<br>JUL 16 2017 |        |
|                                                    |                        |               |             | <u>Location</u>     |                  | <u>Loc Qty</u>  |                    | <u>Loc Code</u> |                |              |               |                                 |        |
|                                                    |                        |               |             | GA                  |                  | 24              |                    |                 |                |              |               |                                 |        |
|                                                    |                        |               |             | m131026             |                  | 24              |                    |                 |                |              |               |                                 |        |
|                                                    | DAS<br>28<br>9-89      |               |             | ST260a              |                  | 1000            |                    |                 |                |              |               |                                 |        |
|                                                    |                        |               |             | m137459             |                  | 1000            |                    |                 |                | 4            |               |                                 |        |
|                                                    |                        |               |             | ST264               |                  | 156             |                    |                 |                |              |               |                                 |        |
|                                                    |                        |               |             | m134676             |                  | 156             |                    |                 |                |              |               |                                 |        |

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Shop Packet Print

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DQA: \_\_\_\_\_ Date: \_\_\_\_\_



## WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: \_\_\_\_\_ Date: \_\_\_\_\_

Work Order update only ☐

|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                                                                                                                                                                                                                                                                                                                                                                                                                             |  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |  |                                                                                                                    |  |                                                                                                                                                                                                                                                                                                                                                                                                                         |  |                                                                                                                                                                                                                                                                                                                                                                                                                                   |  |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|--------------------------------------------------------------------------------------------------------------------|--|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|
| Work Order: _____<br><br>Part No. _____<br><br>NCR No. _____                                                                                                                                                                                                                                                                                                                                                                                                                                   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | <b>DISPOSITION</b><br><br>Rework <input type="checkbox"/><br>Scrap <input type="checkbox"/><br>Use-as-is <input type="checkbox"/><br>Suspected Unapproved <input type="checkbox"/>                                                                                                                                                                                                                                          |  | <b>AGAINST DEPARTMENT/PROCESS</b><br><br><div style="display: flex; justify-content: space-between;"> <div>             Skid-tube <input type="checkbox"/><br/>             Machining <input type="checkbox"/><br/>             Thermoforming <input type="checkbox"/><br/>             Large Fab <input type="checkbox"/> </div> <div>             Cross tube <input type="checkbox"/><br/>             Small Fab <input type="checkbox"/><br/>             Finishing <input type="checkbox"/><br/>             Composite <input type="checkbox"/> </div> <div>             Water Jet <input type="checkbox"/><br/>             Prod. Eng. Coord. <input type="checkbox"/><br/>             Rec/Store/Packaging <input type="checkbox"/><br/>             Supplier <input type="checkbox"/> </div> <div>             Engineering <input type="checkbox"/><br/>             Quality <input type="checkbox"/><br/>             Other <input type="checkbox"/> </div> </div> |  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |  |                                                                                                                    |  |                                                                                                                                                                                                                                                                                                                                                                                                                         |  |                                                                                                                                                                                                                                                                                                                                                                                                                                   |  |
| Date :                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | Step #:                                                                                                                                                                                                                                                                                                                                                                                                                     |  | QTY Effective :                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |  | MRB (QS1042) Approval                                                                                              |  |                                                                                                                                                                                                                                                                                                                                                                                                                         |  |                                                                                                                                                                                                                                                                                                                                                                                                                                   |  |
| Description Work Order Deviation                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                                                                                                                                                                                                                                                                                                                                                                                                                             |  | Disposition                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |  | Completed By<br><br><br>Lead hand / Supervisor<br>Approval Verification<br><br><br>QC / QA Coordinator<br>Approval |  |                                                                                                                                                                                                                                                                                                                                                                                                                         |  |                                                                                                                                                                                                                                                                                                                                                                                                                                   |  |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                                                                                                                                                                                                                                                                                                                                                                                                                             |  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |  |                                                                                                                    |  |                                                                                                                                                                                                                                                                                                                                                                                                                         |  |                                                                                                                                                                                                                                                                                                                                                                                                                                   |  |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                                                                                                                                                                                                                                                                                                                                                                                                                             |  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |  |                                                                                                                    |  |                                                                                                                                                                                                                                                                                                                                                                                                                         |  |                                                                                                                                                                                                                                                                                                                                                                                                                                   |  |
| Root Cause                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | FAULT CATEGORY                                                                                                                                                                                                                                                                                                                                                                                                              |  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |  |                                                                                                                    |  |                                                                                                                                                                                                                                                                                                                                                                                                                         |  |                                                                                                                                                                                                                                                                                                                                                                                                                                   |  |
| Environment <input type="checkbox"/><br>Design <input type="checkbox"/><br>Doc/Data <input type="checkbox"/><br>Equip/Tooling <input type="checkbox"/><br>Handling/Pre <input type="checkbox"/><br>Material <input type="checkbox"/><br>Internal Transport <input type="checkbox"/><br>Tribal Knowledge <input type="checkbox"/><br>LOA <input type="checkbox"/><br>Substation <input type="checkbox"/><br>Past Expiry Date <input type="checkbox"/><br>Misidentified <input type="checkbox"/> | No Re-verification <input type="checkbox"/><br>Operator <input type="checkbox"/><br>Offset/Setup <input type="checkbox"/><br>Supplier <input type="checkbox"/><br>Training <input type="checkbox"/><br>Use for Testing <input type="checkbox"/><br>Poor Information <input type="checkbox"/><br>Rushing <input type="checkbox"/><br>Product Improvement <input type="checkbox"/><br>Process Improvement <input type="checkbox"/><br>Manufacturing Process <input type="checkbox"/><br>Past Due <input type="checkbox"/> | Pressure/Forced <input type="checkbox"/><br>Bending <input type="checkbox"/><br>Centre Not Concentric <input type="checkbox"/><br>Cracks <input type="checkbox"/><br>Crimp/Kink/Ripple/Wave <input type="checkbox"/><br>Cuffs <input type="checkbox"/><br>Crushing <input type="checkbox"/><br>Heat Treat <input type="checkbox"/><br>Wave/Twist in Tube <input type="checkbox"/><br>Marks/Chatter <input type="checkbox"/> |  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |  | Temperature/Cure <input type="checkbox"/><br>Set-up <input type="checkbox"/><br>BOM/Route <input type="checkbox"/><br>Broken/Damage/Defect <input type="checkbox"/><br>Inspection Incomplete/Unqualified <input type="checkbox"/><br>Contamination <input type="checkbox"/><br>Countersink <input type="checkbox"/><br>Cut Too Short <input type="checkbox"/><br>Instructions Incomplete/Unclear <input type="checkbox"/><br>Drill Holes <input type="checkbox"/> |  |                                                                                                                    |  | Power Loss/Surge <input type="checkbox"/><br>Folio/Program <input type="checkbox"/><br>Grain <input type="checkbox"/><br>Weld <input type="checkbox"/><br>Wrong Stock Pulled <input type="checkbox"/><br>Out of Sequence <input type="checkbox"/><br>Off-set <input type="checkbox"/><br>Mislabeled <input type="checkbox"/><br>Fit/Function <input type="checkbox"/><br>Misaligned/off center <input type="checkbox"/> |  | Positioned Wrong <input type="checkbox"/><br>Outside Dimensions <input type="checkbox"/><br>Over/Under tolerance <input type="checkbox"/><br>Part Incorrect <input type="checkbox"/><br>Part Lost/Missing <input type="checkbox"/><br>Part Moved <input type="checkbox"/><br>Drawing <input type="checkbox"/><br>Finish <input type="checkbox"/><br>Misread <input type="checkbox"/><br>Turning Sequence <input type="checkbox"/> |  |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | OTHER :                                                                                                                                                                                                                                                                                                                                                                                                                     |  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |  |                                                                                                                    |  |                                                                                                                                                                                                                                                                                                                                                                                                                         |  |                                                                                                                                                                                                                                                                                                                                                                                                                                   |  |



# Picklist Print

Monday, June 05, 2017 4:53:44 PM

Work Order ID: 162389

\*162389\*

Parent Item: D119-796-241

\*D119-796-241\*

Parent Item Name: AFT Crosstube Installation without Step (no hardware)

Start Date: 6/22/2017

Required Date: 7/19/2017

Start Qty: 1.00

Required Qty: 1.00

D119-796-241TRN

Manufactured No

130

Each

0.0000

\*D119-796-241TRN\*

Crosstube Turning Detail

D2873-043

Manufactured No

242

Each

97.0000

\*D2873-043\*

Nut Plate Assembly

\*\*

1

1

JW

17-10

\*\*

4

4

DAS  
41  
9-89

JUL 15 2017

## Location

## Loc Qty

## Loc Code

LG050

97

155504

5

156196

29

159540

30

161520

33

4

D5122-1

Manufactured No

252

Each

8.0000

\*D5122-1\*

Center Support, Upper

\*\*

1

1

DAS  
41  
9-89

JUL 16 2017

## Location

## Loc Qty

## Loc Code

LG053

6

154815

6

LG054

2

150243

2

1

D5123-1

Manufactured No

252

Each

396.0000

\*D5123-1\*

Clamp Cushion

\*\*

6

6

DAS  
41  
9-89

JUL 16 2017

## Location

## Loc Qty

## Loc Code

LG054

396

153232

196

160081

200

6

DQA: \_\_\_\_\_ Date: \_\_\_\_\_



## WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: \_\_\_\_\_ Date: \_\_\_\_\_ Work Order update only ☐

|                                                              |                                                |                                                                                                                                                                                    |                                                            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                                               |  |                       |                                              |  |
|--------------------------------------------------------------|------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------|--|-----------------------|----------------------------------------------|--|
| Work Order: _____<br><br>Part No. _____<br><br>NCR No. _____ |                                                | <b>DISPOSITION</b><br><br>Rework <input type="checkbox"/><br>Scrap <input type="checkbox"/><br>Use-as-is <input type="checkbox"/><br>Suspected Unapproved <input type="checkbox"/> |                                                            | <b>AGAINST DEPARTMENT/PROCESS</b><br><br><div style="display: flex; justify-content: space-between;"> <div>             Skid-tube <input type="checkbox"/><br/>             Machining <input type="checkbox"/><br/>             Thermoforming <input type="checkbox"/><br/>             Large Fab <input type="checkbox"/> </div> <div>             Cross tube <input type="checkbox"/><br/>             Small Fab <input type="checkbox"/><br/>             Finishing <input type="checkbox"/><br/>             Composite <input type="checkbox"/> </div> <div>             Water Jet <input type="checkbox"/><br/>             Prod. Eng. Coord. <input type="checkbox"/><br/>             Rec/Store/Packaging <input type="checkbox"/><br/>             Supplier <input type="checkbox"/> </div> <div>             Engineering <input type="checkbox"/><br/>             Quality <input type="checkbox"/><br/>             Other <input type="checkbox"/> </div> </div> |                                               |  |                       |                                              |  |
| Date: _____                                                  |                                                | Step #: _____                                                                                                                                                                      |                                                            | QTY Effective : _____                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |                                               |  | MRB (QSI042) Approval |                                              |  |
| Description Work Order Deviation                             |                                                |                                                                                                                                                                                    |                                                            | Disposition                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                                               |  |                       | Completed By                                 |  |
|                                                              |                                                |                                                                                                                                                                                    |                                                            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                                               |  |                       | Lead hand / Supervisor Approval Verification |  |
|                                                              |                                                |                                                                                                                                                                                    |                                                            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                                               |  |                       | QC / QA Coordinator Approval                 |  |
|                                                              |                                                |                                                                                                                                                                                    |                                                            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                                               |  |                       |                                              |  |
| Root Cause                                                   |                                                | FAULT CATEGORY                                                                                                                                                                     |                                                            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                                               |  |                       |                                              |  |
| Environment <input type="checkbox"/>                         | No Re-verification <input type="checkbox"/>    | Pressure/Forced <input type="checkbox"/>                                                                                                                                           | Temperature/Cure <input type="checkbox"/>                  | Power Loss/Surge <input type="checkbox"/>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | Positioned Wrong <input type="checkbox"/>     |  |                       |                                              |  |
| Design <input type="checkbox"/>                              | Operator <input type="checkbox"/>              | Bending <input type="checkbox"/>                                                                                                                                                   | Set-up <input type="checkbox"/>                            | Folio/Program <input type="checkbox"/>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | Outside Dimensions <input type="checkbox"/>   |  |                       |                                              |  |
| Doc/Data <input type="checkbox"/>                            | Offset/Setup <input type="checkbox"/>          | Centre Not Concentric <input type="checkbox"/>                                                                                                                                     | BOM/Route <input type="checkbox"/>                         | Grain <input type="checkbox"/>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | Over/Under tolerance <input type="checkbox"/> |  |                       |                                              |  |
| Equip/Tooling <input type="checkbox"/>                       | Supplier <input type="checkbox"/>              | Cracks <input type="checkbox"/>                                                                                                                                                    | Broken/Damage/Defect <input type="checkbox"/>              | Weld <input type="checkbox"/>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | Part Incorrect <input type="checkbox"/>       |  |                       |                                              |  |
| Handling/Pre <input type="checkbox"/>                        | Training <input type="checkbox"/>              | Crimp/Kink/Ripple/Wave <input type="checkbox"/>                                                                                                                                    | Inspection Incomplete/Unqualified <input type="checkbox"/> | Wrong Stock Pulled <input type="checkbox"/>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | Part Lost/Missing <input type="checkbox"/>    |  |                       |                                              |  |
| Material <input type="checkbox"/>                            | Use for Testing <input type="checkbox"/>       | Cuffs <input type="checkbox"/>                                                                                                                                                     | Contamination <input type="checkbox"/>                     | Out of Sequence <input type="checkbox"/>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | Part Moved <input type="checkbox"/>           |  |                       |                                              |  |
| Internal Transport <input type="checkbox"/>                  | Poor Information <input type="checkbox"/>      | Crushing <input type="checkbox"/>                                                                                                                                                  | Countersink <input type="checkbox"/>                       | Off-set <input type="checkbox"/>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | Drawing <input type="checkbox"/>              |  |                       |                                              |  |
| Tribal Knowledge <input type="checkbox"/>                    | Rushing <input type="checkbox"/>               | Heat Treat <input type="checkbox"/>                                                                                                                                                | Cut Too Short <input type="checkbox"/>                     | Mislabeled <input type="checkbox"/>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | Finish <input type="checkbox"/>               |  |                       |                                              |  |
| LOA <input type="checkbox"/>                                 | Product Improvement <input type="checkbox"/>   | Wave/Twist in Tube <input type="checkbox"/>                                                                                                                                        | Instructions Incomplete/Unclear <input type="checkbox"/>   | Fit/Function <input type="checkbox"/>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | Misread <input type="checkbox"/>              |  |                       |                                              |  |
| Substation <input type="checkbox"/>                          | Process Improvement <input type="checkbox"/>   | Marks/Chatter <input type="checkbox"/>                                                                                                                                             | Drill Holes <input type="checkbox"/>                       | Misaligned/off center <input type="checkbox"/>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | Turning Sequence <input type="checkbox"/>     |  |                       |                                              |  |
| Past Expiry Date <input type="checkbox"/>                    | Manufacturing Process <input type="checkbox"/> | OTHER : _____                                                                                                                                                                      |                                                            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                                               |  |                       |                                              |  |
| Misidentified <input type="checkbox"/>                       | Past Due <input type="checkbox"/>              |                                                                                                                                                                                    |                                                            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                                               |  |                       |                                              |  |

# Picklist Print

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Work Order ID: 162389

**\*162389\***

Parent Item: D119-796-241

**\*D119-796-241\***

Parent Item Name: AFT Crosstube Installation without Step (no hardware)

Start Date: 6/22/2017

Required Date: 7/19/2017

Start Qty: 1.00

Required Qty: 1.00

D5136-2 Manufactured No

252

Each

12.0000

1

1

**\*D5136-2\***

Contact Pad, RH

\*\*

DAS

41

9-89

JUL 16 2017

Location

Loc Qty

Loc Code

LG055

12

150461

3

156504

9

D5152-043 Manufactured No

252

Each

2.0000

2

2

**\*D5152-043\***

Aft Post Mount Assembly

\*\*

DAS

41

9-89

JUL 16 2017

Location

Loc Qty

Loc Code

LG055

2

159450

154799

2

CR3212-4-07 Purchased No

242

Each

167.0000

16

16

**\*CR3212-4-07\***

CHERRY RIVET

\*\*

DAS

41

9-89

JUL 15 2017

JUL 15 2017

Location

Loc Qty

Loc Code

LG056

167

m135978

167

16

DQA: \_\_\_\_\_ Date: \_\_\_\_\_



## WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: \_\_\_\_\_ Date: \_\_\_\_\_

Work Order update only ☐

|                                                              |                                                |                                                                                                                                                                                    |                                                            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                                               |  |                       |                                              |  |
|--------------------------------------------------------------|------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------|--|-----------------------|----------------------------------------------|--|
| Work Order: _____<br><br>Part No. _____<br><br>NCR No. _____ |                                                | <b>DISPOSITION</b><br><br>Rework <input type="checkbox"/><br>Scrap <input type="checkbox"/><br>Use-as-is <input type="checkbox"/><br>Suspected Unapproved <input type="checkbox"/> |                                                            | <b>AGAINST DEPARTMENT/PROCESS</b><br><br><div style="display: flex; justify-content: space-between;"> <div>           Skid-tube <input type="checkbox"/><br/>           Machining <input type="checkbox"/><br/>           Thermoforming <input type="checkbox"/><br/>           Large Fab <input type="checkbox"/> </div> <div>           Cross tube <input type="checkbox"/><br/>           Small Fab <input type="checkbox"/><br/>           Finishing <input type="checkbox"/><br/>           Composite <input type="checkbox"/> </div> <div>           Water Jet <input type="checkbox"/><br/>           Prod. Eng. Coord. <input type="checkbox"/><br/>           Rec/Store/Packaging <input type="checkbox"/><br/>           Supplier <input type="checkbox"/> </div> <div>           Engineering <input type="checkbox"/><br/>           Quality <input type="checkbox"/><br/>           Other <input type="checkbox"/> </div> </div> |                                               |  |                       |                                              |  |
| Date : _____                                                 |                                                | Step # : _____                                                                                                                                                                     |                                                            | QTY Effective : _____                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |                                               |  | MRB (QSI042) Approval |                                              |  |
| Description Work Order Deviation                             |                                                |                                                                                                                                                                                    |                                                            | Disposition                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                                               |  |                       | Completed By                                 |  |
|                                                              |                                                |                                                                                                                                                                                    |                                                            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                                               |  |                       | Lead hand / Supervisor Approval Verification |  |
|                                                              |                                                |                                                                                                                                                                                    |                                                            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                                               |  |                       |                                              |  |
|                                                              |                                                |                                                                                                                                                                                    |                                                            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                                               |  |                       | QC / QA Coordinator Approval                 |  |
| Root Cause                                                   |                                                | FAULT CATEGORY                                                                                                                                                                     |                                                            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                                               |  |                       |                                              |  |
| Environment <input type="checkbox"/>                         | No Re-verification <input type="checkbox"/>    | Pressure/Forced <input type="checkbox"/>                                                                                                                                           | Temperature/Cure <input type="checkbox"/>                  | Power Loss/Surge <input type="checkbox"/>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | Positioned Wrong <input type="checkbox"/>     |  |                       |                                              |  |
| Design <input type="checkbox"/>                              | Operator <input type="checkbox"/>              | Bending <input type="checkbox"/>                                                                                                                                                   | Set-up <input type="checkbox"/>                            | Folio/Program <input type="checkbox"/>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | Outside Dimensions <input type="checkbox"/>   |  |                       |                                              |  |
| Doc/Data <input type="checkbox"/>                            | Offset/Setup <input type="checkbox"/>          | Centre Not Concentric <input type="checkbox"/>                                                                                                                                     | BOM/Route <input type="checkbox"/>                         | Grain <input type="checkbox"/>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | Over/Under tolerance <input type="checkbox"/> |  |                       |                                              |  |
| Equip/Tooling <input type="checkbox"/>                       | Supplier <input type="checkbox"/>              | Cracks <input type="checkbox"/>                                                                                                                                                    | Broken/Damage/Defect <input type="checkbox"/>              | Weld <input type="checkbox"/>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | Part Incorrect <input type="checkbox"/>       |  |                       |                                              |  |
| Handling/Pre <input type="checkbox"/>                        | Training <input type="checkbox"/>              | Crimp/Kink/Ripple/Wave <input type="checkbox"/>                                                                                                                                    | Inspection Incomplete/Unqualified <input type="checkbox"/> | Wrong Stock Pulled <input type="checkbox"/>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | Part Lost/Missing <input type="checkbox"/>    |  |                       |                                              |  |
| Material <input type="checkbox"/>                            | Use for Testing <input type="checkbox"/>       | Cuffs <input type="checkbox"/>                                                                                                                                                     | Contamination <input type="checkbox"/>                     | Out of Sequence <input type="checkbox"/>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | Part Moved <input type="checkbox"/>           |  |                       |                                              |  |
| Internal Transport <input type="checkbox"/>                  | Poor Information <input type="checkbox"/>      | Crushing <input type="checkbox"/>                                                                                                                                                  | Countersink <input type="checkbox"/>                       | Off-set <input type="checkbox"/>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | Drawing <input type="checkbox"/>              |  |                       |                                              |  |
| Tribal Knowledge <input type="checkbox"/>                    | Rushing <input type="checkbox"/>               | Heat Treat <input type="checkbox"/>                                                                                                                                                | Cut Too Short <input type="checkbox"/>                     | Mislabeled <input type="checkbox"/>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | Finish <input type="checkbox"/>               |  |                       |                                              |  |
| LOA <input type="checkbox"/>                                 | Product Improvement <input type="checkbox"/>   | Wave/Twist in Tube <input type="checkbox"/>                                                                                                                                        | Instructions Incomplete/Unclear <input type="checkbox"/>   | Fit/Function <input type="checkbox"/>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | Misread <input type="checkbox"/>              |  |                       |                                              |  |
| Substation <input type="checkbox"/>                          | Process Improvement <input type="checkbox"/>   | Marks/Chatter <input type="checkbox"/>                                                                                                                                             | Drill Holes <input type="checkbox"/>                       | Misaligned/off center <input type="checkbox"/>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | Turning Sequence <input type="checkbox"/>     |  |                       |                                              |  |
| Past Expiry Date <input type="checkbox"/>                    | Manufacturing Process <input type="checkbox"/> | OTHER : _____                                                                                                                                                                      |                                                            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                                               |  |                       |                                              |  |
| Misidentified <input type="checkbox"/>                       | Past Due <input type="checkbox"/>              |                                                                                                                                                                                    |                                                            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                                               |  |                       |                                              |  |

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Work Order ID: 162389

\*162389\*

Parent Item: D119-796-241

\*D119-796-241\*

Parent Item Name: AFT Crosstube Installation without Step (no hardware)

Start Date: 6/22/2017

Required Date: 7/19/2017

Start Qty: 1.00

Required Qty: 1.00

MS21920-25

Purchased

No

252

Each

128.0000

6

6

\*MS21920-25\*

Clamp

\*\*

DAS  
41  
9-89

JUL 16 2017

Location

Loc Qty

Loc Code

FG

4

120920

2

m134987

2

LG050

124

m136621

2

m136648

25

m136866

22

m137361

25

m137459

25

m137587

25

MS21920-28

Purchased

No

252

Each

93.0000

2

2

\*MS21920-28\*

Clamp

\*\*

DAS  
41  
9-89

JUL 16 2017

Location

Loc Qty

Loc Code

FG

1

105884

1

LG050

80

M136579

5

M137075

25

M137361

25

M137508

25

LG051

1

M132169

1

LG057

2

M134130

2

st543

9

M136740

9

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DQA: \_\_\_\_\_ Date: \_\_\_\_\_



## WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: \_\_\_\_\_ Date: \_\_\_\_\_

Work Order update only ☐

|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |  |  |                                                                                                                                                     |  |  |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|--|-----------------------------------------------------------------------------------------------------------------------------------------------------|--|--|
| Work Order: _____<br><br>Part No. _____<br><br>NCR No. _____                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |  | <b>DISPOSITION</b><br><br>Rework <input type="checkbox"/><br>Scrap <input type="checkbox"/><br>Use-as-is <input type="checkbox"/><br>Suspected Unapproved <input type="checkbox"/>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |  | <b>AGAINST DEPARTMENT/PROCESS</b><br><br><div style="display: flex; justify-content: space-between;"> <div>           Skid-tube <input type="checkbox"/><br/>           Machining <input type="checkbox"/><br/>           Thermoforming <input type="checkbox"/><br/>           Large Fab <input type="checkbox"/> </div> <div>           Cross tube <input type="checkbox"/><br/>           Small Fab <input type="checkbox"/><br/>           Finishing <input type="checkbox"/><br/>           Composite <input type="checkbox"/> </div> <div>           Water Jet <input type="checkbox"/><br/>           Prod. Eng. Coord. <input type="checkbox"/><br/>           Rec/Store/Packaging <input type="checkbox"/><br/>           Supplier <input type="checkbox"/> </div> <div>           Engineering <input type="checkbox"/><br/>           Quality <input type="checkbox"/><br/>           Other <input type="checkbox"/> </div> </div> |  |  |                                                                                                                                                     |  |  |
| Date : _____                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |  | Step #: _____                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |  | QTY Effective : _____                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |  |  | MRB (QSI042) Approval<br><br><br>Completed By<br><br><br>Lead hand / Supervisor<br>Approval Verification<br><br><br>QC / QA Coordinator<br>Approval |  |  |
| Description Work Order Deviation                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |  | Disposition                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |  |  |                                                                                                                                                     |  |  |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |  |  |                                                                                                                                                     |  |  |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |  |  |                                                                                                                                                     |  |  |
| <b>Root Cause</b><br><div style="display: flex; justify-content: space-between;"> <div>           Environment <input type="checkbox"/><br/>           Design <input type="checkbox"/><br/>           Doc/Data <input type="checkbox"/><br/>           Equip/Tooling <input type="checkbox"/><br/>           Handling/Pre <input type="checkbox"/><br/>           Material <input type="checkbox"/><br/>           Internal Transport <input type="checkbox"/><br/>           Tribal Knowledge <input type="checkbox"/><br/>           LOA <input type="checkbox"/><br/>           Substation <input type="checkbox"/><br/>           Past Expiry Date <input type="checkbox"/><br/>           Misidentified <input type="checkbox"/> </div> <div>           No Re-verification <input type="checkbox"/><br/>           Operator <input type="checkbox"/><br/>           Offset/Setup <input type="checkbox"/><br/>           Supplier <input type="checkbox"/><br/>           Training <input type="checkbox"/><br/>           Use for Testing <input type="checkbox"/><br/>           Poor Information <input type="checkbox"/><br/>           Rushing <input type="checkbox"/><br/>           Product Improvement <input type="checkbox"/><br/>           Process Improvement <input type="checkbox"/><br/>           Manufacturing Process <input type="checkbox"/><br/>           Past Due <input type="checkbox"/> </div> </div> |  | <b>FAULT CATEGORY</b><br><div style="display: flex; justify-content: space-between;"> <div>           Pressure/Forced <input type="checkbox"/><br/>           Bending <input type="checkbox"/><br/>           Centre Not Concentric <input type="checkbox"/><br/>           Cracks <input type="checkbox"/><br/>           Crimp/Kink/Ripple/Wave <input type="checkbox"/><br/>           Cuffs <input type="checkbox"/><br/>           Crushing <input type="checkbox"/><br/>           Heat Treat <input type="checkbox"/><br/>           Wave/Twist in Tube <input type="checkbox"/><br/>           Marks/Chatter <input type="checkbox"/> </div> <div>           Temperature/Cure <input type="checkbox"/><br/>           Set-up <input type="checkbox"/><br/>           BOM/Route <input type="checkbox"/><br/>           Broken/Damage/Defect <input type="checkbox"/><br/>           Inspection Incomplete/Unqualified <input type="checkbox"/><br/>           Contamination <input type="checkbox"/><br/>           Countersink <input type="checkbox"/><br/>           Cut Too Short <input type="checkbox"/><br/>           Instructions Incomplete/Unclear <input type="checkbox"/><br/>           Drill Holes <input type="checkbox"/> </div> <div>           Power Loss/Surge <input type="checkbox"/><br/>           Folio/Program <input type="checkbox"/><br/>           Grain <input type="checkbox"/><br/>           Weld <input type="checkbox"/><br/>           Wrong Stock Pulled <input type="checkbox"/><br/>           Out of Sequence <input type="checkbox"/><br/>           Off-set <input type="checkbox"/><br/>           Misabeled <input type="checkbox"/><br/>           Fit/Function <input type="checkbox"/><br/>           Misaligned/off center <input type="checkbox"/> </div> <div>           Positioned Wrong <input type="checkbox"/><br/>           Outside Dimensions <input type="checkbox"/><br/>           Over/Under tolerance <input type="checkbox"/><br/>           Part Incorrect <input type="checkbox"/><br/>           Part Lost/Missing <input type="checkbox"/><br/>           Part Moved <input type="checkbox"/><br/>           Drawing <input type="checkbox"/><br/>           Finish <input type="checkbox"/><br/>           Misread <input type="checkbox"/><br/>           Turning Sequence <input type="checkbox"/> </div> </div> |  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |  |  |                                                                                                                                                     |  |  |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |  | OTHER : <input type="checkbox"/>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |  |  |                                                                                                                                                     |  |  |

# Picklist Print

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Work Order ID: 162389

**\*162389\***

Parent Item: D119-796-241

**\*D119-796-241\***

Parent Item Name: AFT Crosstube Installation without Step (no hardware)

Start Date: 6/22/2017

Required Date: 7/19/2017

Start Qty: 1.00

Required Qty: 1.00

D5515-1 Manufactured No

252 Each 18.0000 2 2

**\*D5515-1\***

Grounding Clamp

\*\*

DAS

41

JUL 25 2017

9-89

Location

Loc Qty

Loc Code

ST517

18

160166

18

2

MS27039-1-08

Purchased No

252 Each 149.0000 2 2

**\*MS27039-1-08\***

Screw

\*\*

DAS

41

JUL 25 2017

9-89

Location

Loc Qty

Loc Code

FP001

89

m136047

3

m137361

86

GA

22

m128636

22

ST281

38

m137361

38

MS21042-3

MS21042L3

Purchased No

252 Each 0.0000 2 2

**\*MS21042L3\***

Nut

\*\*

DAS

41

JUL 25 2017

9-89

137886

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Shop Packet Print

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DQA: \_\_\_\_\_ Date: \_\_\_\_\_



## WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: \_\_\_\_\_ Date: \_\_\_\_\_

Work Order update only ☐

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| Work Order: _____<br><br>Part No. _____<br><br>NCR No. _____                                                                                                                                                                                                                                                                                                                                                                                                                                   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | <b>DISPOSITION</b><br><br>Rework <input type="checkbox"/><br>Scrap <input type="checkbox"/><br>Use-as-is <input type="checkbox"/><br>Suspected Unapproved <input type="checkbox"/>                                                                                                                                                                                                                                          |                                      | <b>AGAINST DEPARTMENT/PROCESS</b><br><br><table style="width:100%; border: none;"> <tr> <td style="border: none;">Skid-tube <input type="checkbox"/></td> <td style="border: none;">Cross tube <input type="checkbox"/></td> <td style="border: none;">Water Jet <input type="checkbox"/></td> <td style="border: none;">Engineering <input type="checkbox"/></td> </tr> <tr> <td style="border: none;">Machining <input type="checkbox"/></td> <td style="border: none;">Small Fab <input type="checkbox"/></td> <td style="border: none;">Prod. Eng. Coord. <input type="checkbox"/></td> <td style="border: none;">Quality <input type="checkbox"/></td> </tr> <tr> <td style="border: none;">Thermoforming <input type="checkbox"/></td> <td style="border: none;">Finishing <input type="checkbox"/></td> <td style="border: none;">Rec/Store/Packaging <input type="checkbox"/></td> <td style="border: none;">Other <input type="checkbox"/></td> </tr> <tr> <td style="border: none;">Large Fab <input type="checkbox"/></td> <td style="border: none;">Composite <input type="checkbox"/></td> <td style="border: none;">Supplier <input type="checkbox"/></td> <td></td> </tr> </table> |  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                       |                                              |  | Skid-tube <input type="checkbox"/>                                                                                                                                                                                                                                                                                                                                                                                      | Cross tube <input type="checkbox"/> | Water Jet <input type="checkbox"/> | Engineering <input type="checkbox"/> | Machining <input type="checkbox"/>                                                                                                                                                                                                                                                                                                                                                                                                | Small Fab <input type="checkbox"/> | Prod. Eng. Coord. <input type="checkbox"/> | Quality <input type="checkbox"/> | Thermoforming <input type="checkbox"/> | Finishing <input type="checkbox"/> | Rec/Store/Packaging <input type="checkbox"/> | Other <input type="checkbox"/> | Large Fab <input type="checkbox"/> | Composite <input type="checkbox"/> | Supplier <input type="checkbox"/> |  |
| Skid-tube <input type="checkbox"/>                                                                                                                                                                                                                                                                                                                                                                                                                                                             | Cross tube <input type="checkbox"/>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | Water Jet <input type="checkbox"/>                                                                                                                                                                                                                                                                                                                                                                                          | Engineering <input type="checkbox"/> |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                       |                                              |  |                                                                                                                                                                                                                                                                                                                                                                                                                         |                                     |                                    |                                      |                                                                                                                                                                                                                                                                                                                                                                                                                                   |                                    |                                            |                                  |                                        |                                    |                                              |                                |                                    |                                    |                                   |  |
| Machining <input type="checkbox"/>                                                                                                                                                                                                                                                                                                                                                                                                                                                             | Small Fab <input type="checkbox"/>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | Prod. Eng. Coord. <input type="checkbox"/>                                                                                                                                                                                                                                                                                                                                                                                  | Quality <input type="checkbox"/>     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                       |                                              |  |                                                                                                                                                                                                                                                                                                                                                                                                                         |                                     |                                    |                                      |                                                                                                                                                                                                                                                                                                                                                                                                                                   |                                    |                                            |                                  |                                        |                                    |                                              |                                |                                    |                                    |                                   |  |
| Thermoforming <input type="checkbox"/>                                                                                                                                                                                                                                                                                                                                                                                                                                                         | Finishing <input type="checkbox"/>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | Rec/Store/Packaging <input type="checkbox"/>                                                                                                                                                                                                                                                                                                                                                                                | Other <input type="checkbox"/>       |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                       |                                              |  |                                                                                                                                                                                                                                                                                                                                                                                                                         |                                     |                                    |                                      |                                                                                                                                                                                                                                                                                                                                                                                                                                   |                                    |                                            |                                  |                                        |                                    |                                              |                                |                                    |                                    |                                   |  |
| Large Fab <input type="checkbox"/>                                                                                                                                                                                                                                                                                                                                                                                                                                                             | Composite <input type="checkbox"/>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | Supplier <input type="checkbox"/>                                                                                                                                                                                                                                                                                                                                                                                           |                                      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                       |                                              |  |                                                                                                                                                                                                                                                                                                                                                                                                                         |                                     |                                    |                                      |                                                                                                                                                                                                                                                                                                                                                                                                                                   |                                    |                                            |                                  |                                        |                                    |                                              |                                |                                    |                                    |                                   |  |
| Date :                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | Step #:                                                                                                                                                                                                                                                                                                                                                                                                                     |                                      | QTY Effective :                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | MRB (QS1042) Approval |                                              |  |                                                                                                                                                                                                                                                                                                                                                                                                                         |                                     |                                    |                                      |                                                                                                                                                                                                                                                                                                                                                                                                                                   |                                    |                                            |                                  |                                        |                                    |                                              |                                |                                    |                                    |                                   |  |
| Description Work Order Deviation                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                                                                                                                                                                                                                                                                                                                                                                                                                             |                                      | Disposition                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                       | Completed By                                 |  |                                                                                                                                                                                                                                                                                                                                                                                                                         |                                     |                                    |                                      |                                                                                                                                                                                                                                                                                                                                                                                                                                   |                                    |                                            |                                  |                                        |                                    |                                              |                                |                                    |                                    |                                   |  |
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| Root Cause                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | FAULT CATEGORY                                                                                                                                                                                                                                                                                                                                                                                                              |                                      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                       |                                              |  |                                                                                                                                                                                                                                                                                                                                                                                                                         |                                     |                                    |                                      |                                                                                                                                                                                                                                                                                                                                                                                                                                   |                                    |                                            |                                  |                                        |                                    |                                              |                                |                                    |                                    |                                   |  |
| Environment <input type="checkbox"/><br>Design <input type="checkbox"/><br>Doc/Data <input type="checkbox"/><br>Equip/Tooling <input type="checkbox"/><br>Handling/Pre <input type="checkbox"/><br>Material <input type="checkbox"/><br>Internal Transport <input type="checkbox"/><br>Tribal Knowledge <input type="checkbox"/><br>LOA <input type="checkbox"/><br>Substation <input type="checkbox"/><br>Past Expiry Date <input type="checkbox"/><br>Misidentified <input type="checkbox"/> | No Re-verification <input type="checkbox"/><br>Operator <input type="checkbox"/><br>Offset/Setup <input type="checkbox"/><br>Supplier <input type="checkbox"/><br>Training <input type="checkbox"/><br>Use for Testing <input type="checkbox"/><br>Poor Information <input type="checkbox"/><br>Rushing <input type="checkbox"/><br>Product Improvement <input type="checkbox"/><br>Process Improvement <input type="checkbox"/><br>Manufacturing Process <input type="checkbox"/><br>Past Due <input type="checkbox"/> | Pressure/Forced <input type="checkbox"/><br>Bending <input type="checkbox"/><br>Centre Not Concentric <input type="checkbox"/><br>Cracks <input type="checkbox"/><br>Crimp/Kink/Ripple/Wave <input type="checkbox"/><br>Cuffs <input type="checkbox"/><br>Crushing <input type="checkbox"/><br>Heat Treat <input type="checkbox"/><br>Wave/Twist in Tube <input type="checkbox"/><br>Marks/Chatter <input type="checkbox"/> |                                      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |  | Temperature/Cure <input type="checkbox"/><br>Set-up <input type="checkbox"/><br>BOM/Route <input type="checkbox"/><br>Broken/Damage/Defect <input type="checkbox"/><br>Inspection Incomplete/Unqualified <input type="checkbox"/><br>Contamination <input type="checkbox"/><br>Countersink <input type="checkbox"/><br>Cut Too Short <input type="checkbox"/><br>Instructions Incomplete/Unclear <input type="checkbox"/><br>Drill Holes <input type="checkbox"/> |                       |                                              |  | Power Loss/Surge <input type="checkbox"/><br>Folio/Program <input type="checkbox"/><br>Grain <input type="checkbox"/><br>Weld <input type="checkbox"/><br>Wrong Stock Pulled <input type="checkbox"/><br>Out of Sequence <input type="checkbox"/><br>Off-set <input type="checkbox"/><br>Mislabeled <input type="checkbox"/><br>Fit/Function <input type="checkbox"/><br>Misaligned/off center <input type="checkbox"/> |                                     |                                    |                                      | Positioned Wrong <input type="checkbox"/><br>Outside Dimensions <input type="checkbox"/><br>Over/Under tolerance <input type="checkbox"/><br>Part Incorrect <input type="checkbox"/><br>Part Lost/Missing <input type="checkbox"/><br>Part Moved <input type="checkbox"/><br>Drawing <input type="checkbox"/><br>Finish <input type="checkbox"/><br>Misread <input type="checkbox"/><br>Turning Sequence <input type="checkbox"/> |                                    |                                            |                                  |                                        |                                    |                                              |                                |                                    |                                    |                                   |  |
| OTHER : <input type="checkbox"/>                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                                                                                                                                                                                                                                                                                                                                                                                                                             |                                      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                       |                                              |  |                                                                                                                                                                                                                                                                                                                                                                                                                         |                                     |                                    |                                      |                                                                                                                                                                                                                                                                                                                                                                                                                                   |                                    |                                            |                                  |                                        |                                    |                                              |                                |                                    |                                    |                                   |  |



# Picklist Print

Monday, June 05, 2017 4:53:44 PM

Work Order ID: 162389

**\*162389\***

Parent Item: D119-796-241

**\*D119-796-241\***

Parent Item Name: AFT Crosstube Installation without Step (no hardware)

Start Date: 6/22/2017

Required Date: 7/19/2017

Start Qty: 1.00

Required Qty: 1.00

NAS1149D0332J

Purchased

No

252

Each

791.0000

4

4

**\*NAS1149D0332.J\***

Washer

\*\*

DAS

41

9-89

JUL 25 2017

Location

Loc Qty

Loc Code

|       |         |     |   |
|-------|---------|-----|---|
| FP    | 137903  | 225 | 4 |
|       | m136015 | 8   |   |
|       | m137075 | 217 |   |
| GA    |         | 308 |   |
|       | m136643 | 308 |   |
| ST264 |         | 258 |   |
|       | m136015 | 0   |   |
|       | m137412 | 258 |   |

DQA: \_\_\_\_\_ Date: \_\_\_\_\_

**WORK ORDER NON-CONFORMANCE / UPDATE**

QA Closed: \_\_\_\_\_ Date: \_\_\_\_\_

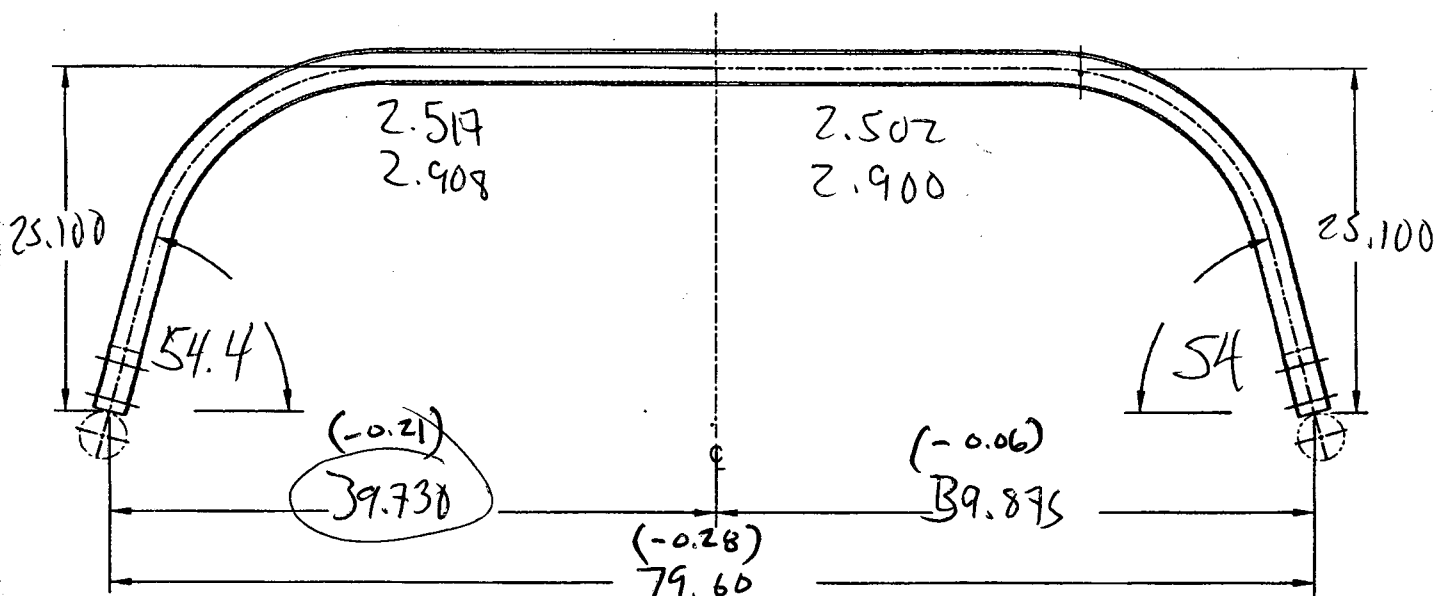
Work Order update only ☐

|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                                                                                                                                                                                                                                                                                                                                                                                                                        |                                                                                                                                                                                                                                                                                                                                                                                                                                   |
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| Work Order: _____<br><br>Part No. _____<br><br>NCR No. _____                                                                                                                                                                                                                                                                                                                                                                                                                                   | <b>DISPOSITION</b><br><br>Rework <input type="checkbox"/><br>Scrap <input type="checkbox"/><br>Use-as-is <input type="checkbox"/><br>Suspected Unapproved <input type="checkbox"/>                                                                                                                                                                                                                                                                                                                                      | <b>AGAINST DEPARTMENT/PROCESS</b><br><br><div style="display: flex; justify-content: space-between;"> <div>           Skid-tube <input type="checkbox"/><br/>           Machining <input type="checkbox"/><br/>           Thermoforming <input type="checkbox"/><br/>           Large Fab <input type="checkbox"/> </div> <div>           Cross tube <input type="checkbox"/><br/>           Small Fab <input type="checkbox"/><br/>           Finishing <input type="checkbox"/><br/>           Composite <input type="checkbox"/> </div> <div>           Water Jet <input type="checkbox"/><br/>           Prod. Eng. Coord. <input type="checkbox"/><br/>           Rec/Store/Packaging <input type="checkbox"/><br/>           Supplier <input type="checkbox"/> </div> <div>           Engineering <input type="checkbox"/><br/>           Quality <input type="checkbox"/><br/>           Other <input type="checkbox"/> </div> </div> |                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                                                                                                                                                                                                                                                                                                                                                                                                                        |                                                                                                                                                                                                                                                                                                                                                                                                                                   |
| Date : _____                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | Step #: _____                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | QTY Effective : _____                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | MRB (QSI042) Approval                                                                                                                                                                                                                                                                                                                                                                                                  |                                                                                                                                                                                                                                                                                                                                                                                                                                   |
| Description Work Order Deviation                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | Disposition                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                                                                                                                                                                                                                                                                                                                                                                                                                        | Completed By                                                                                                                                                                                                                                                                                                                                                                                                                      |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                                                                                                                                                                                                                                                                                                                                                                                                                        | Lead hand / Supervisor Approval Verification                                                                                                                                                                                                                                                                                                                                                                                      |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                                                                                                                                                                                                                                                                                                                                                                                                                        | QC / QA Coordinator Approval                                                                                                                                                                                                                                                                                                                                                                                                      |
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| Root Cause                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | FAULT CATEGORY                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                                                                                                                                                                                                                                                                                                                                                                                                                        |                                                                                                                                                                                                                                                                                                                                                                                                                                   |
| Environment <input type="checkbox"/><br>Design <input type="checkbox"/><br>Doc/Data <input type="checkbox"/><br>Equip/Tooling <input type="checkbox"/><br>Handling/Pre <input type="checkbox"/><br>Material <input type="checkbox"/><br>Internal Transport <input type="checkbox"/><br>Tribal Knowledge <input type="checkbox"/><br>LOA <input type="checkbox"/><br>Substation <input type="checkbox"/><br>Past Expiry Date <input type="checkbox"/><br>Misidentified <input type="checkbox"/> | No Re-verification <input type="checkbox"/><br>Operator <input type="checkbox"/><br>Offset/Setup <input type="checkbox"/><br>Supplier <input type="checkbox"/><br>Training <input type="checkbox"/><br>Use for Testing <input type="checkbox"/><br>Poor Information <input type="checkbox"/><br>Rushing <input type="checkbox"/><br>Product Improvement <input type="checkbox"/><br>Process Improvement <input type="checkbox"/><br>Manufacturing Process <input type="checkbox"/><br>Past Due <input type="checkbox"/> | Pressure/Forced <input type="checkbox"/><br>Bending <input type="checkbox"/><br>Centre Not Concentric <input type="checkbox"/><br>Cracks <input type="checkbox"/><br>Crimp/Kink/Ripple/Wave <input type="checkbox"/><br>Cuffs <input type="checkbox"/><br>Crushing <input type="checkbox"/><br>Heat Treat <input type="checkbox"/><br>Wave/Twist in Tube <input type="checkbox"/><br>Marks/Chatter <input type="checkbox"/>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | Temperature/Cure <input type="checkbox"/><br>Set-up <input type="checkbox"/><br>BOM/Route <input type="checkbox"/><br>Broken/Damage/Defect <input type="checkbox"/><br>Inspection Incomplete/Unqualified <input type="checkbox"/><br>Contamination <input type="checkbox"/><br>Countersink <input type="checkbox"/><br>Cut Too Short <input type="checkbox"/><br>Instructions Incomplete/Unclear <input type="checkbox"/><br>Drill Holes <input type="checkbox"/> | Power Loss/Surge <input type="checkbox"/><br>Folio/Program <input type="checkbox"/><br>Grain <input type="checkbox"/><br>Weld <input type="checkbox"/><br>Wrong Stock Pulled <input type="checkbox"/><br>Out of Sequence <input type="checkbox"/><br>Off-set <input type="checkbox"/><br>Misabeled <input type="checkbox"/><br>Fit/Function <input type="checkbox"/><br>Misaligned/off center <input type="checkbox"/> | Positioned Wrong <input type="checkbox"/><br>Outside Dimensions <input type="checkbox"/><br>Over/Under tolerance <input type="checkbox"/><br>Part Incorrect <input type="checkbox"/><br>Part Lost/Missing <input type="checkbox"/><br>Part Moved <input type="checkbox"/><br>Drawing <input type="checkbox"/><br>Finish <input type="checkbox"/><br>Misread <input type="checkbox"/><br>Turning Sequence <input type="checkbox"/> |
| OTHER : <input type="checkbox"/>                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                                                                                                                                                                                                                                                                                                                                                                                                                        |                                                                                                                                                                                                                                                                                                                                                                                                                                   |

|                                              |                          |                     |                    |
|----------------------------------------------|--------------------------|---------------------|--------------------|
| <b>DART AEROSPACE LTD</b>                    | <b>DAS</b><br>02<br>9-89 | <b>Work Order:</b>  | 162389             |
| <b>Description:</b> Crosstube Aft, with Step | 17-6-7                   | <b>Part Number:</b> | D119-796-241       |
| <b>Inspection Dwg:</b> D119-796-241          | <b>Rev:</b> X J          |                     | <b>Page 1 of 1</b> |

| Required Dimension | Min    | Max    |
|--------------------|--------|--------|
| Height             | 24.840 | 25.100 |
| 1/2 Span           | 39.810 | 40.070 |
| Angle              | 54°    | 57°    |
| Total Span         | 79.620 | 80.140 |
| Bending Passes     | 8      | --     |
| Crushing           | --     | 8.5%   |

Num.  
39.94  
79.88



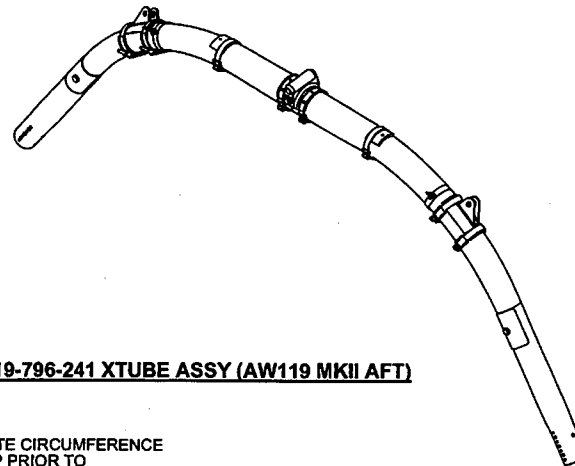
★  
SEE  
Attached

|                | Side A | Side B |
|----------------|--------|--------|
| Bending Passes | 14     | 16     |
| Crushing       | 7.2%   | 7.4%   |
| Comments       |        |        |
|                |        |        |
|                |        |        |
|                |        |        |

|                 |                         |
|-----------------|-------------------------|
| QC15 Inspection | DAS<br>35<br>JUL 1 2017 |
| Date            |                         |

| Rev | Date     | Change            | Revised by | Approved |
|-----|----------|-------------------|------------|----------|
| A   | 15.04.14 | New Issue         | KJ         |          |
| B   | 15.11.12 | Min angle revised | KJ         |          |
| C   | 15.12.15 | Dwg Rev updated   | KJ         |          |

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SUBJECT TO AMENDMENT  
WITHOUT NOTICE  
WORK ORDER  
NO. 162389 u.s  
170607



**D119-796-241 XTUBE ASSY (AW119 MKII AFT)**

**NOTES:**

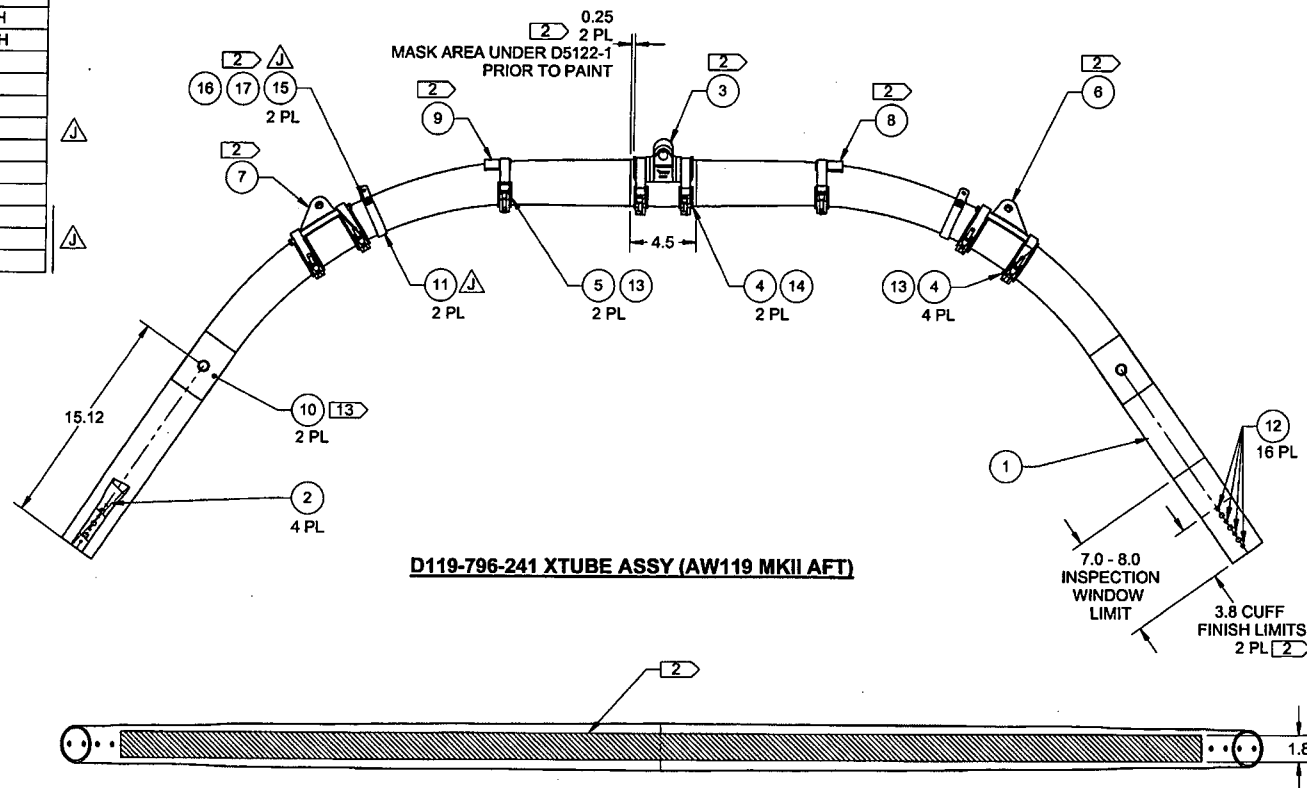
- 1) MATERIAL: N/A
- 2) FINISH: MASK D5134-041/-042 DAMPER SUPPORT ASSEMBLIES, CUFFS, D5136-1/-2 CONTACT PADS, THE COMPLETE CIRCUMFERENCE OF THE TUBE UNDER THE D5122-1 CENTER SUPPORT AND THE TAB ON THE D5515-1 GROUNDING CLAMP PRIOR TO APPLICATION OF CLEAR COAT/PAINT.  
IF NECESSARY TOUCH UP PRIMER ON OUTSIDE OF CROSSTUBE PER DART QSI 005 4.2.  
APPLY MATTE CLEAR COAT TO THE UNDERSIDE OF CROSSTUBE AS SHOWN (B4-2, HATCHED AREA) PER QSI 005 4.2.  
MASK THE UNDERSIDE OF CROSSTUBE AS SHOWN (B4-2, HATCHED AREA).  
PAINT OUTSIDE PER DART QSI 005 4.2
- 3) TOLERANCES: PER DART QSI 018 UNLESS OTHERWISE NOTED
- 4) UNITS: INCHES UNLESS OTHERWISE NOTED
- 5) BREAK SHARP EDGES: N/A
- 6) IDENTIFICATION: IDENTIFY USING PART NUMBER "D119-796-241" AND BATCH NUMBER ON INSIDE OF CUFF PER QSI 044 6.4
- 7) WEIGHT: 26.26 lbs
- 8) EXTREME CARE MUST BE TAKEN TO PROTECT THE OUTSIDE SURFACE OF THE TUBE. THE OUTSIDE SURFACE MUST BE SMOOTH AND FREE FROM DEFECTS SUCH AS SCRATCHES, NICKS OR DENTS. DEFECTS UP TO 0.005 MAY BE BLENDED OUT LONGITUDINALLY. CIRCUMFERENTIAL GRIND MARKS ARE UNACCEPTABLE.
- 9) INSTALL D5122-1 CENTER SUPPORT HAND TIGHT ONLY. DO NOT TORQUE. INSTALL RED TAG TO INDICATE "D5122-1 CENTER SUPPORT MUST BE BONDED PER IIN-D119-796 PRIOR TO FLIGHT".
- 10) PRIOR TO FINISHING, ABRASE MATING SURFACES OF D5136-1/-2 AND SURFACE OF CROSSTUBE WITH SCOTCH BRITE 7447 RED AND REMOVE RESIDUE WITH DUPONT 4105S WASH 'N' WIPE DEGREASER. APPLY A 0.100" MIN THK LAYER OF PROSEAL 890 ON THE INSIDE CONCAVE SURFACE OF THE D5136-1/-2 CONTACT PADS AND INSTALL AT AN 8.4" OFFSET FROM THE CROSSTUBE BENDING PLANE. INSTALL MS21920-25 CLAMPS AND D5123-5 CLAMP CUSHIONS WHILE WET. PRIOR TO PACKAGING, RE-CHECK TORQUE ON CLAMPS AFTER PROSEAL 890 SEALANT HAS CURED FOR 72 HOURS.
- 11) TORQUE MS21920 CLAMPS 80 - 100 IN-LB. ENSURE AT LEAST 1.5 THREADS SHOWING IN SAFETY. THE NUT HAS NOT BOTTOMED-OUT AFTER TORQUING AND THE NUT IS FACING AFT.
- 12) PRIOR TO FINISHING, POSITION AND INSTALL D5134-041/-042 DAMPER SUPPORTS USING JIG DT10085. ABRASE MATING SURFACES OF THE D5134-041/-042 DAMPER SUPPORTS AND CROSSTUBE WITH SCOTCH BRITE 7447 RED AND REMOVE RESIDUE WITH DUPONT 4105S WASH 'N' WIPE DEGREASER. APPLY A 0.100" MIN THK LAYER OF PROSEAL 890 ON THE INSIDE CONCAVE SURFACE OF THE D5134-041/-042. INSTALL MS21920-25 CLAMPS AND D5123-1 CLAMP CUSHIONS WHILE WET. PRIOR TO PACKAGING, RE-CHECK TORQUE ON CLAMPS AFTER PROSEAL 890 SEALANT HAS CURED FOR 72 HOURS. ENSURE THAT THE MS21920 CLAMPS ARE POSITIONED AS SHOWN IN DETAIL C.
- 13) PRIOR TO FINISHING, ABRASE MATING SURFACES OF CROSSTUBE AND D5152-043 WITH SCOTCH BRITE 7447 RED AND REMOVE RESIDUE WITH DUPONT 4105S WASH 'N' WIPE DEGREASER. INSTALL D5152-043 WITH LAYER OF PROSEAL 890 ON INSIDE CONCAVE SURFACE, 0.100" MIN THK LOCATE D5152-043 USING TOOL DT10112.
- 14) INSTALL THE D5515-1 GROUNDING CLAMP AND ASSOCIATED HARDWARE PER DETAIL "C" PRIOR TO FINISHING. TORQUE THE MS21042-3 NUT 12-15 IN-LB. COMPLETELY SEAL THE EDGES OF THE CLAMP USING PROSEAL 890.
- 15) CARRY OUT A RESISTANCE CHECK BETWEEN THE D5515-1 GROUNDING CLAMP AND ANY UNPAINTED SECTION OF THE CROSSTUBE IN ACCORDANCE WITH AC43-13-1B CHAPTER 11. MAXIMUM RESISTANCE IS 3 MEGOHMS.

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2017-05-04  
EON 17-536

|            |                                                                                                                                                                                                                                                                 |                                                                                                                                                                                                                                                                          |              |
|------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------|
| J          | ADD NOTE 14 & 15 ON SHT 1. ADD PAINT/PRIMER MASKING LOCATIONS, REVISE NOTES ON SHT 1 & 4, REVISE BOM ON SHT 2 TO ADD GROUNDING CLAMP AND ASSOCIATED HARDWARE. REF PAR 17-580                                                                                    | ML                                                                                                                                                                                                                                                                       | 17.02.10     |
| I          | D6023-106 MATERIAL REPLACES D6009-106. D5136-1/-2 & D5134-041/-042 NOW INSTALLED ON PRIMER.                                                                                                                                                                     | AP                                                                                                                                                                                                                                                                       | 15.10.13     |
| H          | NOTE 9 RE-WRITTEN. BONDING INSTRUCTIONS MOVED TO IIN. SEE PREVIOUS REV FOR DETAILS.                                                                                                                                                                             | AP                                                                                                                                                                                                                                                                       | 15.07.02     |
| G          | FINISHING ORDER ADJUSTED. UPDATE BEND TOLERANCE AND TRN DETAIL TOLERANCE TO MATCH D119-796-141 DWG                                                                                                                                                              | AP                                                                                                                                                                                                                                                                       | 15.04.24     |
| F          | REMOVED PRIMER/PAINT ON CUFFS, 2.516 WAS 2.500 (C8-5)                                                                                                                                                                                                           | AP                                                                                                                                                                                                                                                                       | 15.02.03     |
| E          | D5152-043 WAS D5150-3, SCOTCH BRITE 7447 RED WAS 180 GRIT SANDPAPER                                                                                                                                                                                             | DB                                                                                                                                                                                                                                                                       | 15.01.15     |
| D          | ADD D5150-3 STEP POST (2X). MOVED INSPECTION WINDOW DETAIL TO SHT 1, MODIFIED NOTES ON SH 1 & 3                                                                                                                                                                 | DB                                                                                                                                                                                                                                                                       | 14.11.25     |
| C          | CR3212-4-07 RIVETS WAS CR3212-4-05 RIVETS. RADIUS BLOCK WAS NUT PLATE ASSEMBLY (BOM). REMOVED 7.5 DEG CUFF HOLE OFFSET (A1-3). REDUCED CUFF DIA TO 2.500 (C8-5). ADD INSPECTION WINDOW                                                                          | AP                                                                                                                                                                                                                                                                       | 14.10.23     |
| B          | ORIENTATION OF D5122-1 CENTER SUPPORT WAS CORRECTED. D5123-5 ADDED UNDER D5136-1/-2 CONTACT PADS. ADDED D2873-043 NUT PLATE ASSY & CR3212-4-05 RIVETS. ADDED REFERENCE TO SKIDTUBES FOR LOCATING GUFF HOLES. RE-ORGANIZED NOTES, REMOVED REDUNDANT INFORMATION. | AP                                                                                                                                                                                                                                                                       | 14.09.08     |
| A          | NEW ISSUE                                                                                                                                                                                                                                                       | AP                                                                                                                                                                                                                                                                       | 14.08.07     |
| REV.       | DESCRIPTION                                                                                                                                                                                                                                                     | BY                                                                                                                                                                                                                                                                       | DATE         |
| DESIGN     | AP                                                                                                                                                                                                                                                              | <b>DART AEROSPACE LTD</b><br>HAWKESBURY, ONTARIO, CANADA                                                                                                                                                                                                                 |              |
| DRAWN      | ML                                                                                                                                                                                                                                                              |                                                                                                                                                                                                                                                                          |              |
| CHECKED    | JMH                                                                                                                                                                                                                                                             | DRAWING NO.                                                                                                                                                                                                                                                              | REV. J       |
| MFG. APPR. | DP                                                                                                                                                                                                                                                              | D119-796-241                                                                                                                                                                                                                                                             | SHEET 1 OF 7 |
| APPROVED   | WM                                                                                                                                                                                                                                                              | TITLE                                                                                                                                                                                                                                                                    | SCALE        |
| DE APPR.   | DS                                                                                                                                                                                                                                                              | XTUBE ASSY (AW119 MKII AFT)                                                                                                                                                                                                                                              | NTS          |
| DATE       | 17.02.10                                                                                                                                                                                                                                                        | COPYRIGHT © 2014 BY DART AEROSPACE LTD<br>THIS DOCUMENT IS PRIVATE AND CONFIDENTIAL AND IS SUPPLIED ON THE EXPRESS CONDITION THAT IT IS NOT TO BE USED FOR ANY PURPOSE OR COPIED OR COMMUNICATED TO ANY OTHER PERSON WITHOUT WRITTEN PERMISSION FROM DART AEROSPACE LTD. |              |

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| ITEM | QTY | P/N             | DESCRIPTION                 |
|------|-----|-----------------|-----------------------------|
|      | X   | D119-796-241    | XTUBE ASSY (AW119 MKII AFT) |
| 1    | 1   | D119-796-241BND | CROSSTUBE, AFT              |
| 2    | 4   | D2873-043       | RADIUS BLOCK                |
| 3    | 1   | D5122-1         | CENTER SUPPORT              |
| 4    | 6   | D5123-1         | CLAMP CUSHION               |
| 5    | 2   | D5123-5         | CLAMP CUSHION               |
| 6    | 1   | D5134-041       | DAMPER SUPPORT ASSY, LH     |
| 7    | 1   | D5134-042       | DAMPER SUPPORT ASSY, RH     |
| 8    | 1   | D5136-1         | CONTACT PAD, LH             |
| 9    | 1   | D5136-2         | CONTACT PAD, RH             |
| 10   | 2   | D5152-043       | AFT POST MOUNT ASSY         |
| 11   | 2   | D5515-1         | GROUNDING CLAMP             |
| 12   | 16  | CR3212-4-07     | CSK RIVET, CHERRY MAX       |
| 13   | 6   | MS21920-25      | CLAMP                       |
| 14   | 2   | MS21920-28      | CLAMP                       |
| 15   | 2   | MS27039-1-08    | SCREW, PAN-HEAD             |
| 16   | 2   | MS21042-3       | NUT                         |
| 17   | 4   | NAS1149D0332J   | WASHER                      |

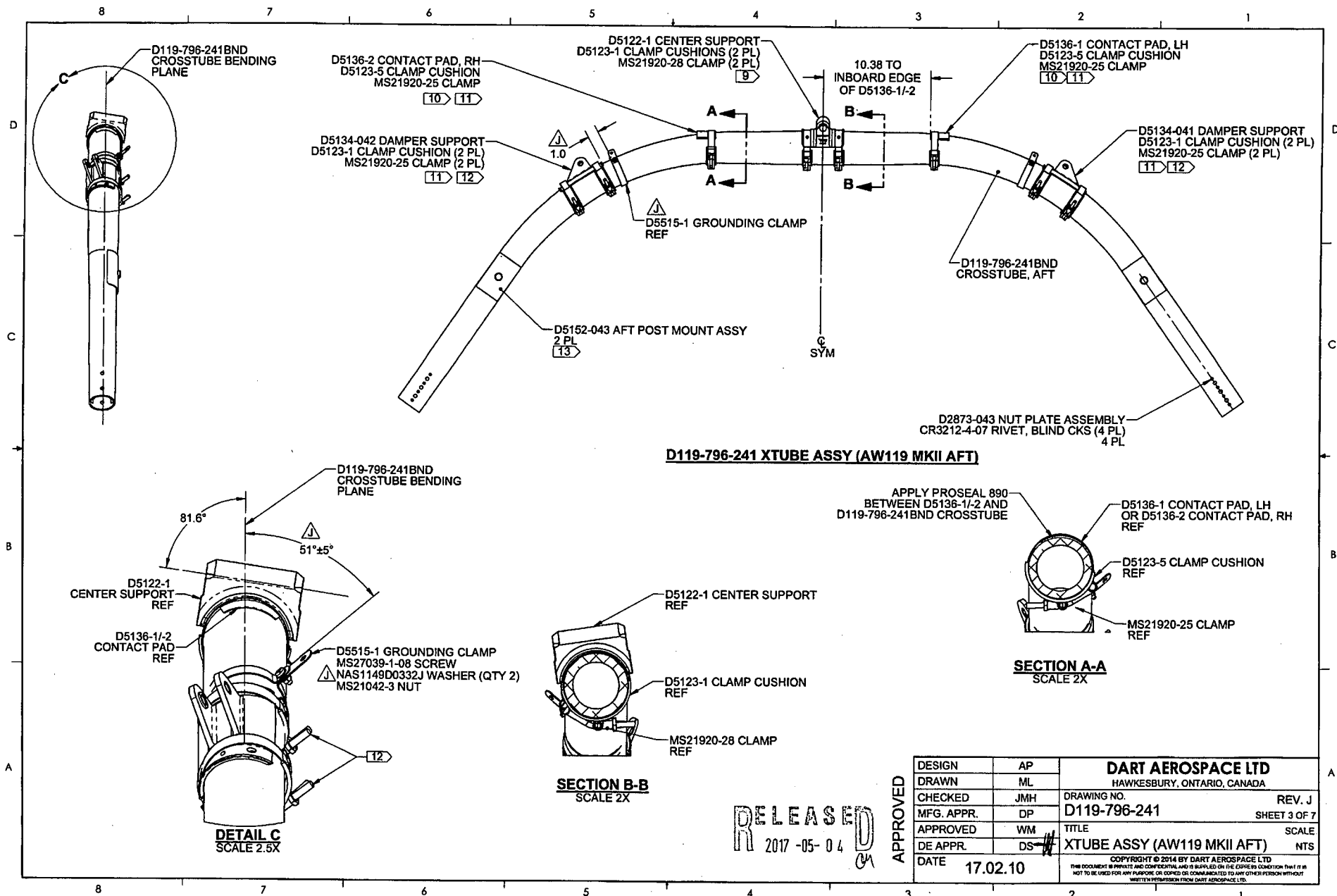


**D119-796-241 XTUBE ASSY (AW119 MKII AFT)**

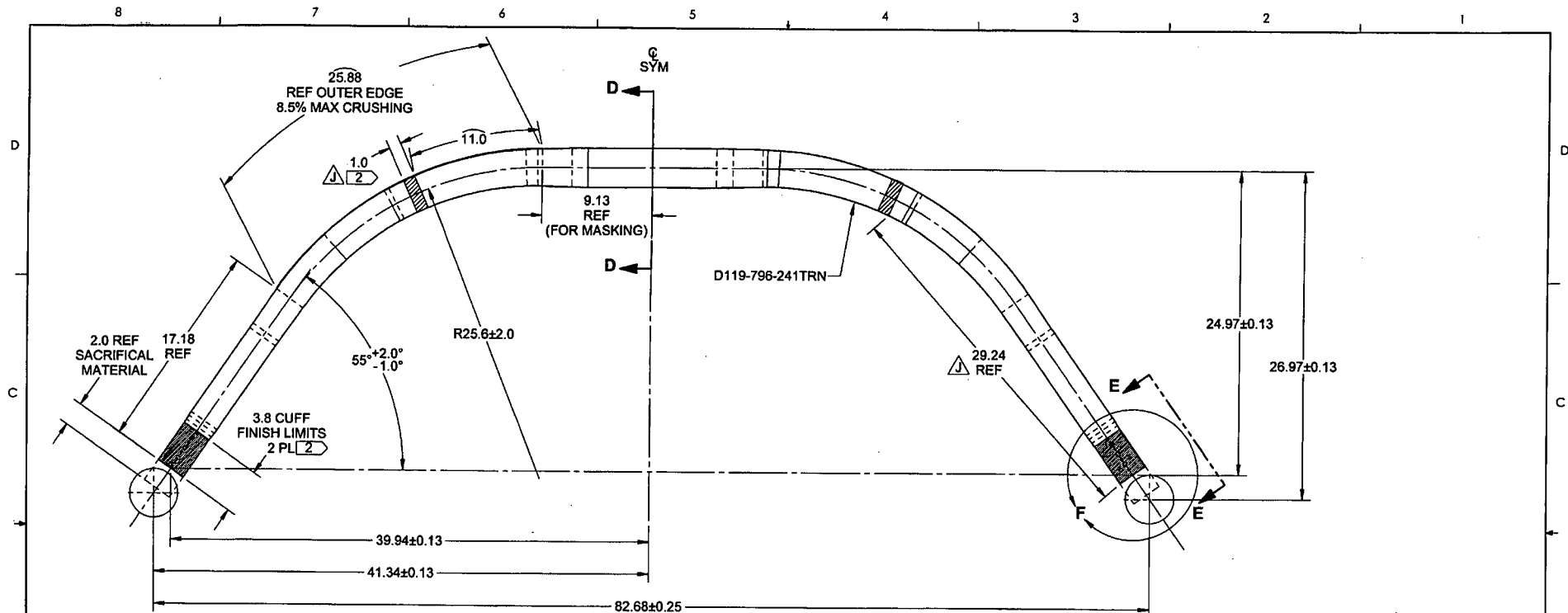
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|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------|----------------------------------------|--------------|
| DESIGN                                                                                                                                                                                                                         | AP       | DART AEROSPACE LTD                     |              |
| DRAWN                                                                                                                                                                                                                          | ML       | HAWKESBURY, ONTARIO, CANADA            |              |
| CHECKED                                                                                                                                                                                                                        | JMH      | DRAWING NO.                            | REV. J       |
| MFG. APPR.                                                                                                                                                                                                                     | DP       | D119-796-241                           | SHEET 2 OF 7 |
| APPROVED                                                                                                                                                                                                                       | WM       | TITLE                                  | SCALE        |
| DE APPR.                                                                                                                                                                                                                       | DS       | XTUBE ASSY (AW119 MKII AFT)            | NTS          |
| DATE                                                                                                                                                                                                                           | 17.02.10 | COPYRIGHT © 2014 BY DART AEROSPACE LTD |              |
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|                                                                                                                                                                                                                                  |          |                                        |              |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------|----------------------------------------|--------------|
| DESIGN                                                                                                                                                                                                                           | AP       | <b>DART AEROSPACE LTD</b>              |              |
| DRAWN                                                                                                                                                                                                                            | ML       | HAWKESBURY, ONTARIO, CANADA            |              |
| CHECKED                                                                                                                                                                                                                          | JMH      | DRAWING NO.                            | REV. J       |
| MFG. APPR.                                                                                                                                                                                                                       | DP       | <b>D119-796-241</b>                    | SHEET 3 OF 7 |
| APPROVED                                                                                                                                                                                                                         | WM       | TITLE                                  | SCALE        |
| DE APPR.                                                                                                                                                                                                                         | DS       | <b>XTUBE ASSY (AW119 MKII AFT)</b>     | NTS          |
| DATE                                                                                                                                                                                                                             | 17.02.10 | COPYRIGHT © 2014 BY DART AEROSPACE LTD |              |
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**D119-796-241BND CROSSTUBE, AFT** 9  
BENDING AND DRILLING DETAIL

**NOTES:**

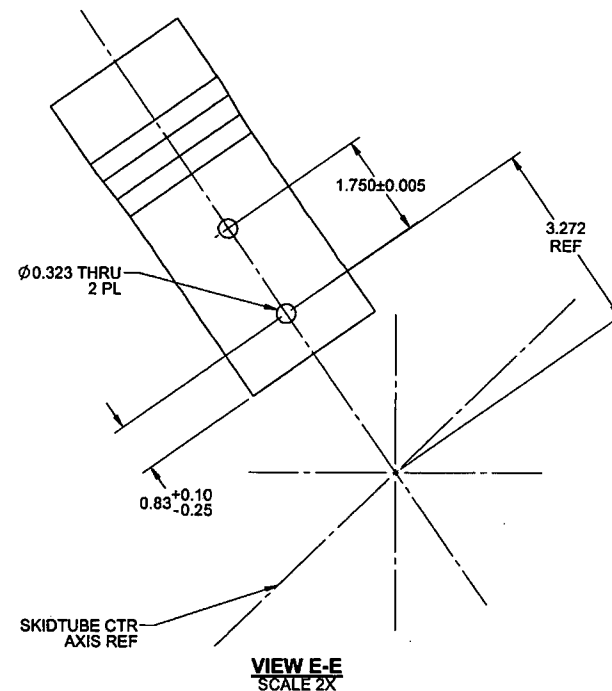
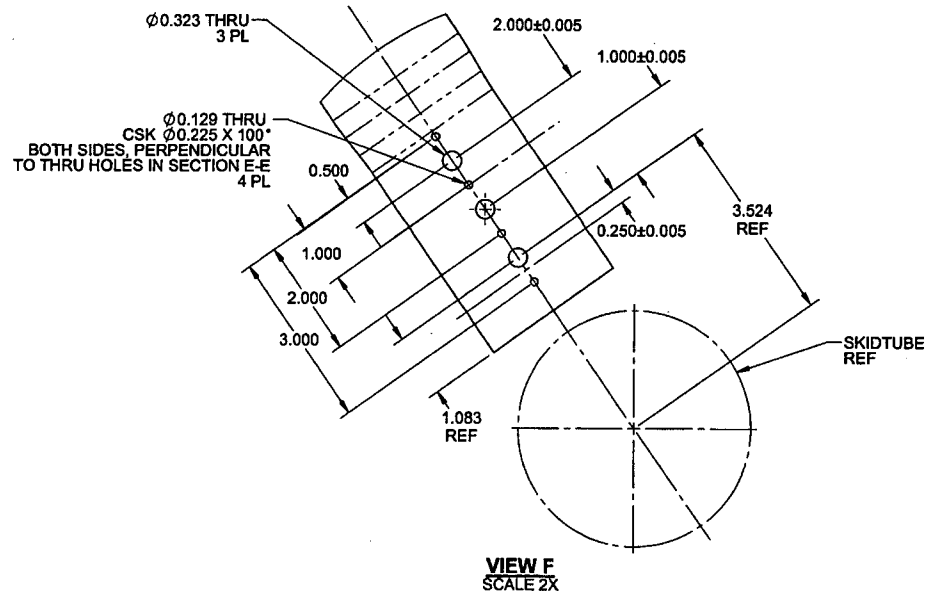
- 1) MATERIAL: MAKE FROM D119-796-241TRN
- 2) FINISH: CHEMICAL CONVERSION COAT PER DART QSI 005 4.1  
PRIME INSIDE AND OUTSIDE PER DART QSI 005 4.2  
DO NOT APPLY PRIMER TO HATCHED LOCATIONS, MASK PRIOR TO FINISHING
- 3) TOLERANCES: PER DART QSI 018 UNLESS OTHERWISE NOTED
- 4) UNITS: INCHES UNLESS OTHERWISE NOTED
- 5) BREAK SHARP EDGES: 0.005 TO 0.010 MAX
- 6) IDENTIFICATION: NONE
- 7) WEIGHT: 24.17 lbs
- 8) PART IS SYMMETRICAL ABOUT CENTERLINE
- 9) BEND PROGRESSIVELY WITH A MINIMUM OF 8 PASSES. MAXIMUM TUBE FLATTENING DUE TO BENDING IS 8.5% BASED ON OD.
- 10) LIQUID PENETRANT INSPECT OUTSIDE SURFACE OF CROSSTUBE PER QSI 038
- 11) EXTREME CARE MUST BE TAKEN TO PROTECT THE OUTSIDE SURFACE OF THE TUBE. THE OUTSIDE SURFACE MUST BE SMOOTH AND FREE FROM DEFECTS SUCH AS SCRATCHES, NICKS OR DENTS. DEFECTS UP TO 0.005 MAY BE BLENDED OUT LONGITUDINALLY. CIRCUMFERENTIAL GRIND MARKS ARE UNACCEPTABLE.

**SECTION D-D**  
SCALE 4X

|            |          |                                                                                                                                                                                                                                                                                |              |
|------------|----------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------|
| DESIGN     | AP       | <b>DART AEROSPACE LTD</b><br>HAWKESBURY, ONTARIO, CANADA                                                                                                                                                                                                                       |              |
| DRAWN      | ML       |                                                                                                                                                                                                                                                                                |              |
| CHECKED    | JMH      | DRAWING NO.                                                                                                                                                                                                                                                                    | REV. J       |
| MFG. APPR. | DP       | <b>D119-796-241</b>                                                                                                                                                                                                                                                            | SHEET 4 OF 7 |
| APPROVED   | WM       | TITLE                                                                                                                                                                                                                                                                          | SCALE        |
| DE APPR.   | DS       | <b>XTUBE ASSY (AW119 MKII AFT)</b>                                                                                                                                                                                                                                             | NTS          |
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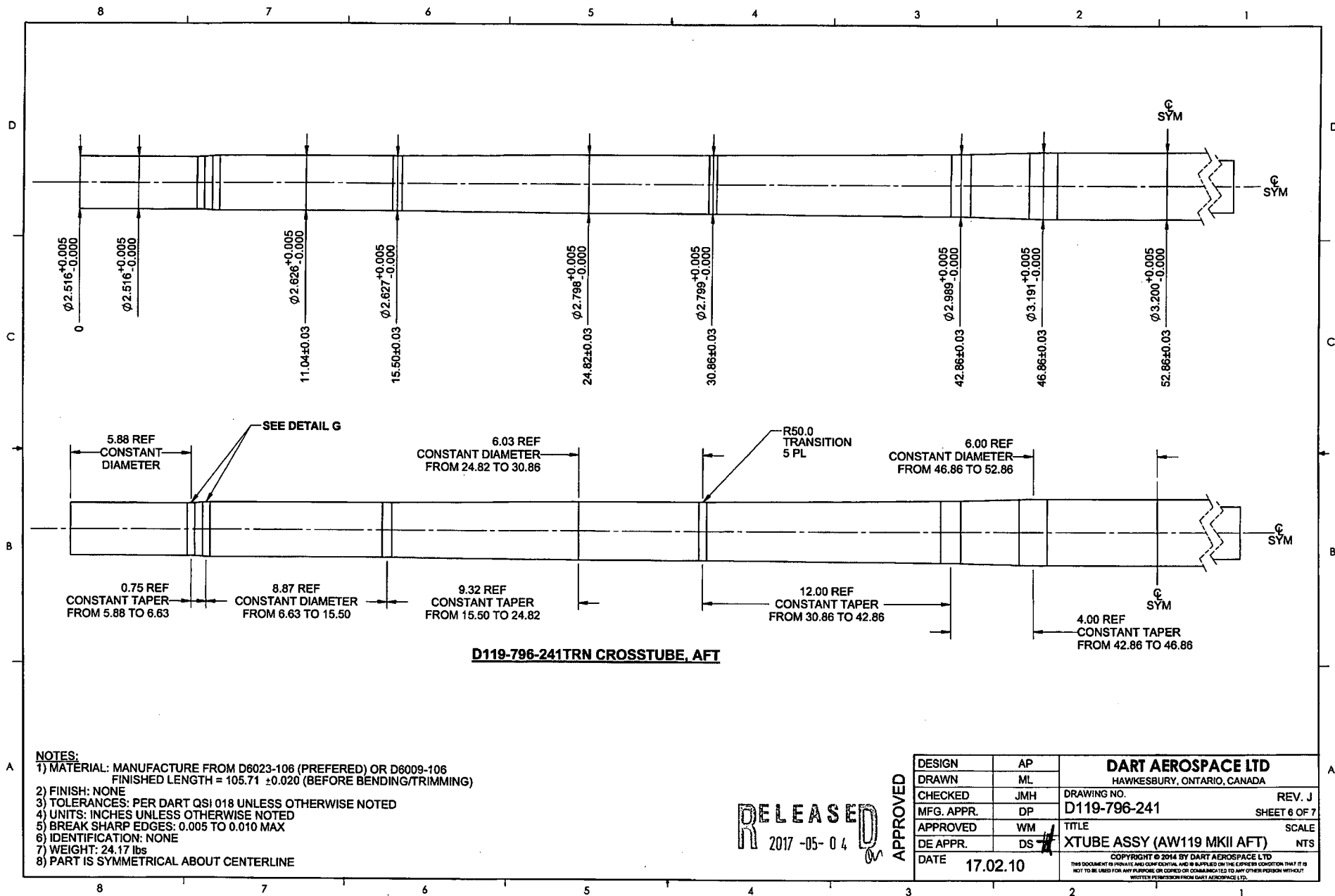


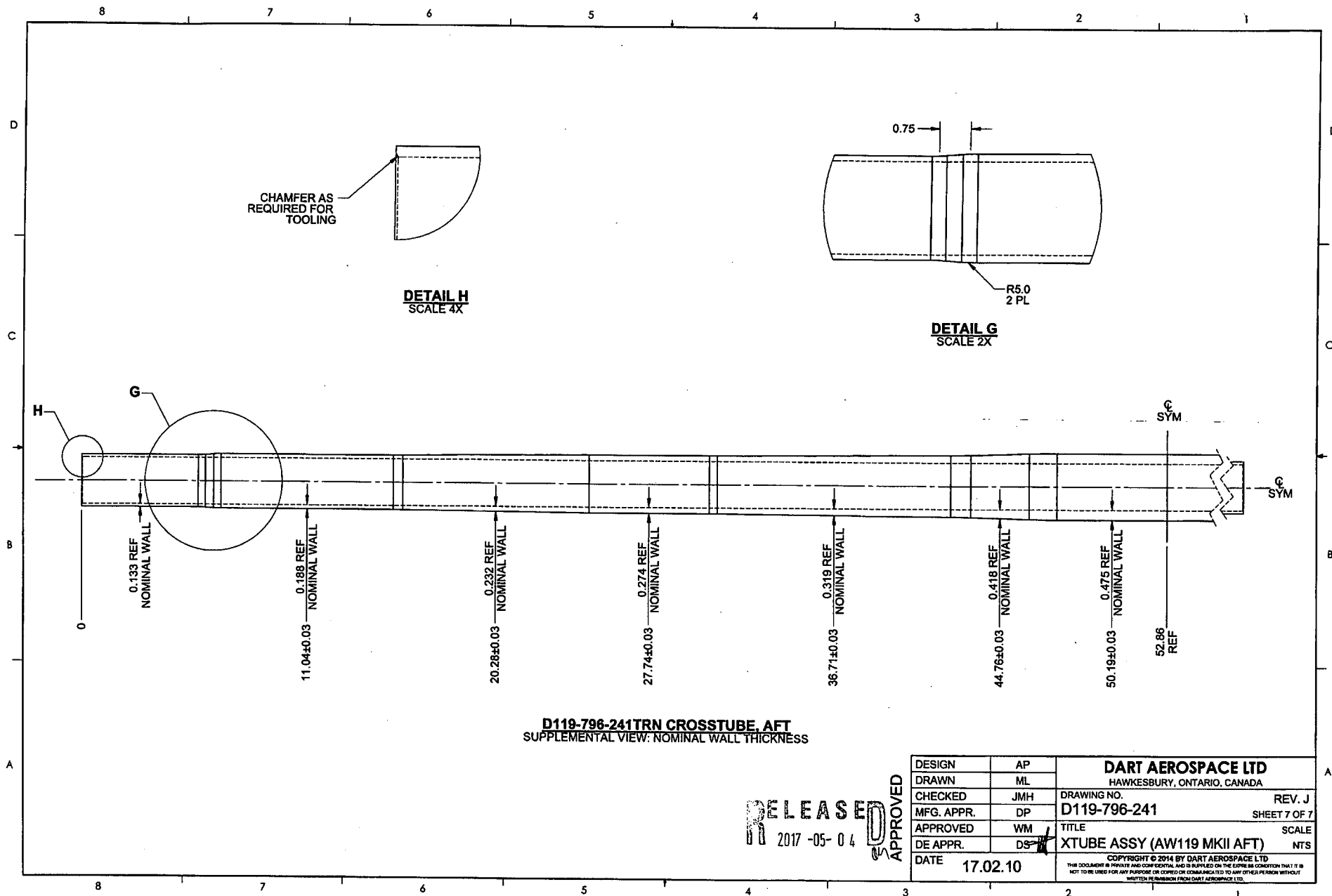
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| DESIGN     | AP       | DART AEROSPACE USA, INC.                                                                                                                                                                                                                                                                  |              |
| DRAWN      | ML       | KENT, WA                                                                                                                                                                                                                                                                                  |              |
| CHECKED    | JMH      | DRAWING NO.                                                                                                                                                                                                                                                                               | REV. J       |
| MFG. APPR. | DP       | D119-796-241                                                                                                                                                                                                                                                                              | SHEET 5 OF 7 |
| APPROVED   | WM       | TITLE                                                                                                                                                                                                                                                                                     | SCALE        |
| DE APPR.   | DS       | XTUBE ASSY (AW119 MKII AFT)                                                                                                                                                                                                                                                               | NTS          |
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2017-05-04

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DQA: \_\_\_\_\_ Date: \_\_\_\_\_



# WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: \_\_\_\_\_ Date: \_\_\_\_\_

Work Order update only ☐

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| Work Order: _____<br><br>Part No. _____<br><br>NCR No. _____                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | <b>DISPOSITION</b><br><br>Rework <input type="checkbox"/><br>Scrap <input type="checkbox"/><br>Use-as-is <input checked="" type="checkbox"/><br>Suspected Unapproved <input type="checkbox"/> | <b>AGAINST DEPARTMENT/PROCESS</b><br><br><table style="width:100%; border: none;"> <tr> <td style="width:15%;">Skid-tube <input type="checkbox"/></td> <td style="width:15%;">Cross tube <input checked="" type="checkbox"/></td> <td style="width:15%;">Water Jet <input type="checkbox"/></td> <td style="width:15%;">Engineering <input type="checkbox"/></td> </tr> <tr> <td>Machining <input type="checkbox"/></td> <td>Small Fab <input type="checkbox"/></td> <td>Prod. Eng. Coord. <input type="checkbox"/></td> <td>Quality <input type="checkbox"/></td> </tr> <tr> <td>Thermoforming <input type="checkbox"/></td> <td>Finishing <input type="checkbox"/></td> <td>Rec/Store/Packaging <input type="checkbox"/></td> <td>Other <input type="checkbox"/></td> </tr> <tr> <td>Large Fab <input type="checkbox"/></td> <td>Composite <input type="checkbox"/></td> <td>Supplier <input type="checkbox"/></td> <td></td> </tr> </table> |                                                                                                                                                                                                  |                                                 |                                                          | Skid-tube <input type="checkbox"/>        | Cross tube <input checked="" type="checkbox"/> | Water Jet <input type="checkbox"/>        | Engineering <input type="checkbox"/> | Machining <input type="checkbox"/> | Small Fab <input type="checkbox"/> | Prod. Eng. Coord. <input type="checkbox"/> | Quality <input type="checkbox"/>       | Thermoforming <input type="checkbox"/>      | Finishing <input type="checkbox"/> | Rec/Store/Packaging <input type="checkbox"/> | Other <input type="checkbox"/>                 | Large Fab <input type="checkbox"/> | Composite <input type="checkbox"/> | Supplier <input type="checkbox"/>                        |                                        |                                   |                                 |                                               |                               |                                         |                                       |                                   |                                                 |                                                            |                                             |                                            |                                              |                                          |                                |                                        |                                          |                                     |                                             |                                           |                                   |                                      |                                  |                                  |                                           |                                  |                                     |                                        |                                     |                                 |                              |                                              |                                             |                                                          |                                       |                                  |                                     |                                              |                                        |                                      |                                                |                                           |                                           |                                                |  |  |  |  |                                        |                                   |  |  |  |  |               |  |  |
| Skid-tube <input type="checkbox"/>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     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|                                      |                                    |                                    |                                            |                                        |                                             |                                    |                                              |                                                |                                    |                                    |                                                          |                                        |                                   |                                 |                                               |                               |                                         |                                       |                                   |                                                 |                                                            |                                             |                       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| Machining <input type="checkbox"/>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | Small Fab <input type="checkbox"/>                                                                                                                                                            | Prod. Eng. Coord. <input type="checkbox"/>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | Quality <input type="checkbox"/>                                                                                                                                                                 |                                                 |                                                          |                                           |                                                |                                           |                                      |                                    |                                    |                                            |                                        |                                             |                                    |                                              |                                                |                                    |                                    |                                                          |                                        |                                   |                                 |                                               |                               |                                         |                                       |                                   |                                                 |                                                            |                                             |                                            |                                              |                                          |                                |                                        |                                          |                                     |                                             |                                           |                                   |                                      |                                  |                                  |                                           |                                  |                                     |                                        |                                     |                                 |                              |                                              |                                             |                                                          |                                       |                                  |                                     |                                              |                                        |                                      |                                                |                                           |                                           |                                                |  |  |  |  |                                        |                                   |  |  |  |  |               |  |  |
| Thermoforming <input type="checkbox"/>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 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| Tube is bent narrow, width = 79.60                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                                                                                                                                                                                               |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | Acceptable. Within what has been accepted in the part without fit issue.                                                                                                                         |                                                 |                                                          |                                           |                                                |                                           |                                      |                                    |                                    |                                            |                                        |                                             |                                    |                                              |                                                |                                    |                                    |                                                          |                                        |                                   |                                 |                                               |                               |                                         |                                       |                                   |                                                 |                                                            |                                             |                                            |                                              |                                          |                                |                                        |                                          |                                     |                                             |                                           |                                   |                                      |                                  |                                  |                                           |                                  |                                     |                                        |                                     |                                 |                              |                                              |                                             |                                                          |                                       |                                  |                                     |                                              |                                        |                                      |                                                |                                           |                                           |                                                |  |  |  |  |                                        |                                   |  |  |  |  |               |  |  |
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|                                      |                                    |                                    |                                            |                                        |                                             |                                    |                                              |                                                |                                    |                                    |                                                          |                                        |                                   |                                 |                                               |                               |                                         |                                       |                                   |                                                 |                                                            |                                             |                       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| <b>Root Cause</b><br><table style="width:100%; border: none;"> <tr> <td style="width:15%;">Environment <input type="checkbox"/></td> <td style="width:15%;">No Re-verification <input type="checkbox"/></td> <td style="width:15%;">Pressure/Forced <input type="checkbox"/></td> <td style="width:15%;">Temperature/Cure <input type="checkbox"/></td> <td style="width:15%;">Power Loss/Surge <input type="checkbox"/></td> <td style="width:15%;">Positioned Wrong <input type="checkbox"/></td> </tr> <tr> <td>Design <input type="checkbox"/></td> <td>Operator <input type="checkbox"/></td> <td>Bending <input type="checkbox"/></td> <td>Set-up <input type="checkbox"/></td> <td>Folio/Program <input type="checkbox"/></td> <td>Outside Dimensions <input type="checkbox"/></td> </tr> <tr> <td>Doc/Data <input type="checkbox"/></td> <td>Offset/Setup <input type="checkbox"/></td> <td>Centre Not Concentric <input type="checkbox"/></td> <td>BOM/Route <input type="checkbox"/></td> <td>Grain <input type="checkbox"/></td> <td><input checked="" type="checkbox"/> Over/Under tolerance</td> </tr> <tr> <td>Equip/Tooling <input type="checkbox"/></td> <td>Supplier <input type="checkbox"/></td> <td>Cracks <input type="checkbox"/></td> <td>Broken/Damage/Defect <input type="checkbox"/></td> <td>Weld <input type="checkbox"/></td> <td>Part Incorrect <input type="checkbox"/></td> </tr> <tr> <td>Handling/Pre <input type="checkbox"/></td> <td>Training <input type="checkbox"/></td> <td>Crimp/Kink/Ripple/Wave <input type="checkbox"/></td> <td>Inspection Incomplete/Unqualified <input type="checkbox"/></td> <td>Wrong Stock Pulled <input type="checkbox"/></td> <td>Part Lost/Missing <input type="checkbox"/></td> </tr> <tr> <td>Material <input checked="" type="checkbox"/></td> <td>Use for Testing <input type="checkbox"/></td> <td>Cuffs <input type="checkbox"/></td> <td>Contamination <input type="checkbox"/></td> <td>Out of Sequence <input type="checkbox"/></td> <td>Part Moved <input 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type="checkbox"/></td> <td>Marks/Chatter <input type="checkbox"/></td> <td>Drill Holes <input type="checkbox"/></td> <td>Misaligned/off center <input type="checkbox"/></td> <td>Turning Sequence <input type="checkbox"/></td> </tr> <tr> <td>Past Expiry Date <input type="checkbox"/></td> <td>Manufacturing Process <input type="checkbox"/></td> <td colspan="4"></td> </tr> <tr> <td>Misidentified <input type="checkbox"/></td> <td>Past Due <input type="checkbox"/></td> <td colspan="4"></td> </tr> </table> |                                                                                                                                                                                               |                                                                                                                                                                                                                                                                                                                 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<input type="checkbox"/> | Part Lost/Missing <input type="checkbox"/> | Material <input checked="" type="checkbox"/> | Use for Testing <input type="checkbox"/> | Cuffs <input type="checkbox"/> | Contamination <input type="checkbox"/> | Out of Sequence <input type="checkbox"/> | Part Moved <input type="checkbox"/> | Internal Transport <input type="checkbox"/> | Poor Information <input type="checkbox"/> | Crushing <input type="checkbox"/> | Countersink <input type="checkbox"/> | Off-set <input type="checkbox"/> | Drawing <input type="checkbox"/> | Tribal Knowledge <input type="checkbox"/> | Rushing <input type="checkbox"/> | Heat Treat <input type="checkbox"/> | Cut Too Short <input type="checkbox"/> | Mislabeled <input type="checkbox"/> | Finish <input type="checkbox"/> | LOA <input type="checkbox"/> | Product Improvement <input type="checkbox"/> | Wave/Twist in Tube <input type="checkbox"/> | Instructions Incomplete/Unclear <input type="checkbox"/> | Fit/Function <input type="checkbox"/> | Misread <input type="checkbox"/> | Substation <input type="checkbox"/> | Process Improvement <input type="checkbox"/> | Marks/Chatter <input type="checkbox"/> | Drill Holes <input type="checkbox"/> | Misaligned/off center <input type="checkbox"/> | Turning Sequence <input type="checkbox"/> | Past Expiry Date <input type="checkbox"/> | Manufacturing Process <input type="checkbox"/> |  |  |  |  | Misidentified <input type="checkbox"/> | Past Due <input type="checkbox"/> |  |  |  |  | OTHER : _____ |  |  |
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| Design <input type="checkbox"/>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        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| Doc/Data <input type="checkbox"/>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      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| Equip/Tooling <input type="checkbox"/>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 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| Handling/Pre <input type="checkbox"/>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  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| Material <input checked="" type="checkbox"/>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           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| Internal Transport <input type="checkbox"/>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            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| Tribal Knowledge <input type="checkbox"/>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | Rushing <input type="checkbox"/>                                                                                                                                                              | Heat Treat <input type="checkbox"/>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | Cut Too Short <input type="checkbox"/>                                                                                                                                                           | Mislabeled <input type="checkbox"/>             | Finish <input type="checkbox"/>                          |                                           |                                                |                                           |                                      |                                    |                                    |                                            |                                        |                                             |                                    |                                              |                                                |                                    |                                    |                                                          |                                        |                                   |                                 |                                               |                               |                                         |                                       |                                   |                                                 |                                                            |                                             |                                            |                                              |                                          |                                |                                        |                                          |                                     |                                             |                                           |                                   |                                      |                                  |                                  |                                           |                                  |                                     |                                        |                                     |                                 |                              |                                              |                                             |                                                          |                                       |                                  |                                     |                                              |                                        |                                      |                                                |                                           |                                           |                                                |  |  |  |  |                                        |                                   |  |  |  |  |               |  |  |
| LOA <input type="checkbox"/>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | Product Improvement <input type="checkbox"/>                                                                                                                                                  | Wave/Twist in Tube <input type="checkbox"/>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | Instructions Incomplete/Unclear <input type="checkbox"/>                                                                                                                                         | Fit/Function <input type="checkbox"/>           | Misread <input type="checkbox"/>                         |                                           |                                                |                                           |                                      |                                    |                                    |                                            |                                        |                                             |                                    |                                              |                                                |                                    |                                    |                                                          |                                        |                                   |                                 |                                               |                               |                                         |                                       |                                   |                                                 |                                                            |                                             |                                            |                                              |                                          |                                |                                        |                                          |                                     |                                             |                                           |                                   |                                      |                                  |                                  |                                           |                                  |                                     |                                        |                                     |                                 |                              |                                              |                                             |                                                          |                                       |                                  |                                     |                                              |                                        |                                      |                                                |                                           |                                           |                                                |  |  |  |  |                                        |                                   |  |  |  |  |               |  |  |
| Substation <input type="checkbox"/>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | Process Improvement <input type="checkbox"/>                                                                                                                                                  | Marks/Chatter <input type="checkbox"/>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | Drill Holes <input type="checkbox"/>                                                                                                                                                             | Misaligned/off center <input type="checkbox"/>  | Turning Sequence <input type="checkbox"/>                |                                           |                                                |                                           |                                      |                                    |                                    |                                            |                                        |                                             |                                    |                                              |                                                |                                    |                                    |                                                          |                                        |                                   |                                 |                                               |                               |                                         |                                       |                                   |                                                 |                                                            |                                             |                                            |                                              |                                          |                                |                                        |                                          |                                     |                                             |                                           |                                   |                                      |                                  |                                  |                                           |                                  |                                     |                                        |                                     |                                 |                              |                                              |                                             |                                                          |                                       |                                  |                                     |                                              |                                        |                                      |                                                |                                           |                                           |                                                |  |  |  |  |                                        |                                   |  |  |  |  |               |  |  |
| Past Expiry Date <input type="checkbox"/>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | Manufacturing Process <input type="checkbox"/>                                                                                                                                                |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                                                                                                                                                                                                  |                                                 |                                                          |                                           |                                                |                                           |                                      |                                    |                                    |                                            |                                        |                                             |                                    |                                              |                                                |                                    |                                    |                                                          |                                        |                                   |                                 |                                               |                               |                                         |                                       |                                   |                                                 |                                                            |                                             |                       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                          |                                              |                                        |                                      |                                                |                                           |                                           |                                                |  |  |  |  |                                        |                                   |  |  |  |  |               |  |  |
| Misidentified <input type="checkbox"/>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | Past Due <input type="checkbox"/>                                                                                                                                                             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                                                                                                                                                                                                  |                                                 |                                                          |                                           |                                                |                                           |                                      |                                    |                                    |                                            |                                        |                                             |                                    |                                              |                                                |                                    |                                    |                                                          |                                        |                                   |                                 |                                               |                               |                                         |                                       |                                   |                                                 |                                                            |                                             |                                            |                                              |                                          |                                |                                        |                                          |                                     |                                             |                                           |                                   |                                      |                                  |                                  |                                           |                                  |                                     |                                        |                                     |                                 |                              |                                              |                                             |                                                          |                                       |                                  |                                     |                                              |                                        |                                      |                                                |                                           |                                           |                                                |  |  |  |  |                                        |                                   |  |  |  |  |               |  |  |



Dart Aerospace Ltd.  
1270 Aberdeen Street  
Hawkesbury, ON K6A 1K7  
Tel: 613 632 9577  
Fax: 613 632 1053

## PURCHASE ORDER

Purchase Order ID **PO37049**

Purchase Order Date 7/14/2017

PO Print Date 7/17/2017

Page Number 1 of 2

Order From :  
SKYSERVICE  
6120 MIDFIELD ROAD  
MISSISSAUGA, ONTARIO L5P 1B1  
CANADA

VC-SKY001

Ship To : DART AEROSPACE LTD  
1270 ABERDEEN  
HAWKESBURY, ON K6A 1K7  
CANADA

Contact Name

Vendor Phone 905-678-5636

Ship To Contact

Ship To Phone

Ship Via: Delivered

Ship Acct:

Buyer

Chantal Lavoie

Customer POID

Customer Tax # 10127-2607

Terms

Net 30

Currency

CAD

FOB

FCA - (Free Carrier)

| Line Nbr | Reference Vendor Part Number                     | Description/ Mfg ID         | Req Date/ Taxable | CD  | Req Qty/ Unit of Measure | PO Unit Price | Extended Price |
|----------|--------------------------------------------------|-----------------------------|-------------------|-----|--------------------------|---------------|----------------|
|          | Line Comments                                    |                             | Promise Date      |     |                          |               |                |
|          | Delivery Comments                                |                             |                   |     |                          |               |                |
| 1        | 71401-45                                         | procurement quality clauses | 7/19/2017         | No  | 1.00                     | \$0.00        | \$0.00         |
|          | Procurement Quality Clauses                      |                             | 7/19/2017         |     |                          |               |                |
|          | A005 right of entry                              |                             |                   |     |                          |               |                |
|          | A012 chemical and physical test report           |                             |                   |     |                          |               |                |
|          | A016 personnel qualification                     |                             |                   |     |                          |               |                |
|          | A017 raw material identification (as applicable) |                             |                   |     |                          |               |                |
|          | A024 process certifications                      |                             |                   |     |                          |               |                |
|          | A026 certification of material conformance       |                             |                   |     |                          |               |                |
|          | A041 quality management system                   |                             |                   |     |                          |               |                |
|          | A042 dart notification by supplier               |                             |                   |     |                          |               |                |
|          | A043 retention of quality documents              |                             |                   |     |                          |               |                |
|          |                                                  |                             |                   |     |                          | Line Total:   | \$0.00         |
| 2        | 162389                                           | D119-796-241 CROSSTUBE      | 7/19/2017         | Yes | 1.00                     | \$0.00        | \$0.00         |
|          |                                                  |                             | 7/19/2017         |     |                          |               |                |
|          |                                                  |                             |                   |     |                          | Line Total:   | \$0.00         |

2017-7-17

Note:

7/17/2017

**skyservice****Work Order Traveler**  
Sky Service F.B.O. Inc.

10105 Ryan Avenue, Dorval, Quebec, H9P 1A2

TCCA AMO 53-89 / EASA 145.7142 / BDA AMO 385

|                   |                                           |                       |                              |
|-------------------|-------------------------------------------|-----------------------|------------------------------|
| WO #: MWO32021    | Customer: CASH SALE<br>PN: DART AEROSPACE | Dept: NDT YUL<br>S/N: | Reference: P037049<br>Qty: 1 |
| Descr:            | Make:                                     | Model:                | Reg:                         |
| TSN:              | CSN:                                      | TSO:                  | A/C S/N:                     |
| Task: UNSCHEDULED |                                           |                       | Sequence: 1                  |

**Work Required:**

CARRY OUT NDT ON THE FOLLOWING AFT CROSS TUBE:

WORK ORDER ID - 16 2389

ITEM ID - D119-796-241

|                                                              |           |                |
|--------------------------------------------------------------|-----------|----------------|
| Action Taken:                                                | Date:     | Initial/Stamp: |
| LIQUID PENETRANT INSPECTION CARRIED OUT ON ITEM LISTED ABOVE | 14 JUL 17 |                |
| W.O ID 162389 ✓                                              |           |                |
| ITEM ID D119-796-241 ✓                                       |           |                |
| NO CRACKS FOUND                                              |           |                |

| Description | Location | P/N      | Qty | Batch     | S/N Off  | S/N On      |
|-------------|----------|----------|-----|-----------|----------|-------------|
| PENETRANT   | AR DROX  | 970P25E  |     | TPD-19388 | EXP DATE | 02 APR 2018 |
| BLACK LIGHT |          | T-20990N |     |           |          |             |
|             |          |          |     |           |          |             |
|             |          |          |     |           |          |             |
|             |          |          |     |           |          |             |
|             |          |          |     |           |          |             |
|             |          |          |     |           |          |             |

SPT 7-7-17.

I certified that the maintenance described above has been performed in accordance with the applicable standard of airworthiness.

|                  |                   |                   |
|------------------|-------------------|-------------------|
| Signature:       | ACA/SCA Stamp<br> | Date: 14 JUL 2017 |
| Name: GARY SMITH |                   |                   |